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MAJOR GENERAL WILLIAM R. SHAFTER

STATISTICS

— OF —

California Production

Commerce and Finance

FOR THE YEARS 1900-1

WITH BRIEF SKETCHES

— OF THE —

Origin and Development of Mining
Agriculture and Horticulture
in the State

PUBLISHERS:

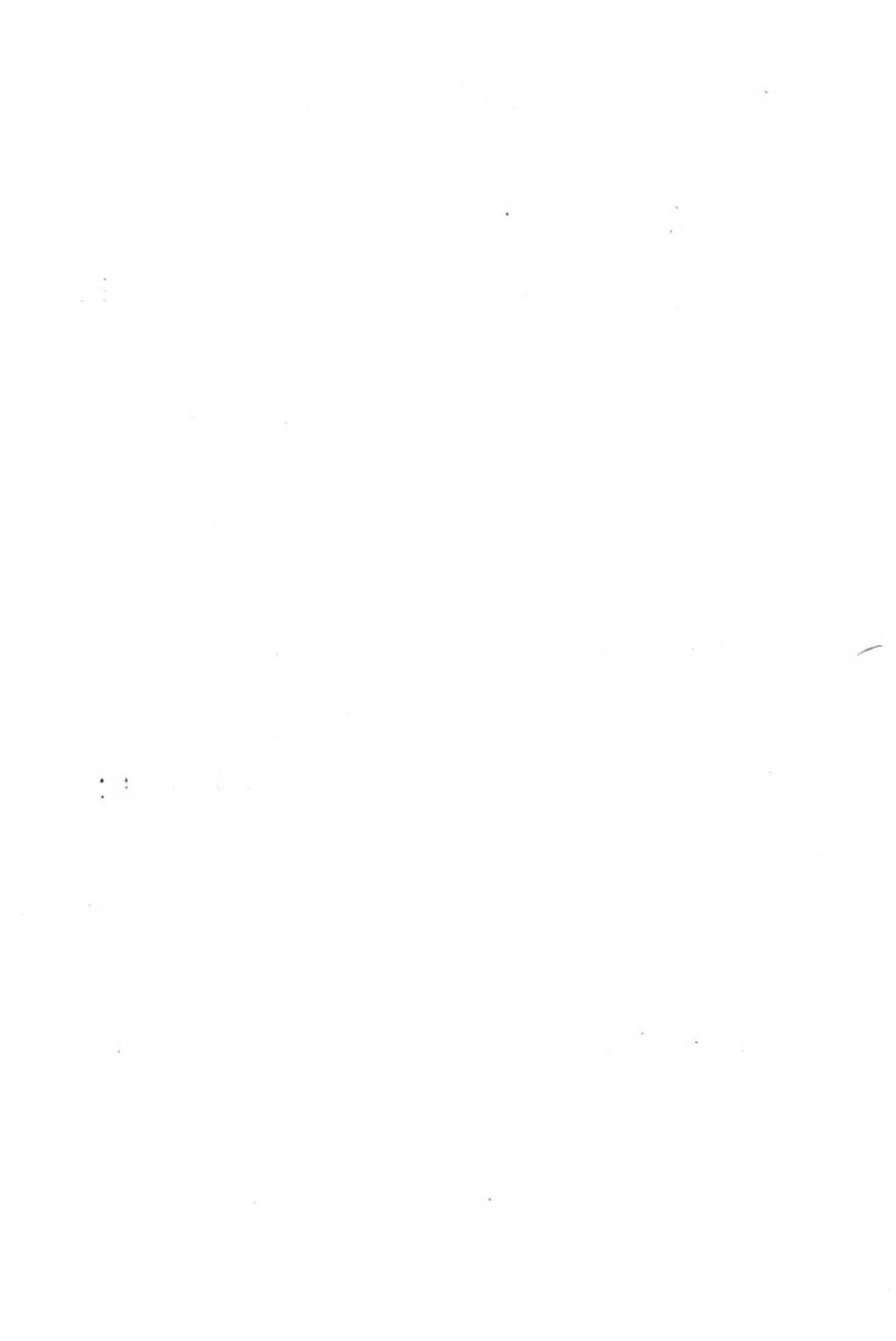
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PREFACE.

The following pages exhibit as briefly as may be the more important facts connected with the origin and development of California's leading industries. To facilitate reference, our aim has been condensation. We give data when it could be obtained, by counties, and where no direct information could be had, estimates based on our general knowledge gained after a study of thirty years, reinforced by consultation with the leading authorities in each field. No doubt the work will call forth considerable criticism, but we have labored conscientiously to produce a valuable exhibit of the State's resources and its achievements in the leading fields of human industry.

It was the intention of the publishers to have dedicated this book to our late President, William McKinley had he lived, the commerce of the State having been largely augmented during his incumbency of the presidential office. The military authorities located here did yeoman service in the advancement of our commerce and industries during that time. The merchants and manufacturers of California owe a debt of gratitude to that arm of the service of which General Wm. R. Shafter was the military head on the Pacific Coast. This book is therefore dedicated to him.

THE PUBLISHERS.

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THE STATE

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CALIFORNIA, in regard to climate and production, occupies the same position in North America that France and Italy do in Europe. Of its 157,593 square miles or 101,350,400 acres by much the greater part is capable of cultivation and its remainder, consisting of mountains and forest land is rich in minerals and in mighty forests of lumber that will provide employment for the miner and the woodman for ages to come; and with the industry of France and Italy applied much of this latter area can be made to produce abundantly of life's necessities and luxuries. Populated as is Great Britain and Ireland it would sustain fifty millions of people. It has a commanding position on the Pacific, and will dominate its commerce for ages to come. Its metropolis, San Francisco, will without doubt, in a hundred years be one of the greatest cities of the world.

Its products number the leading ones of the temperate and semi tropic zones. The leading cereals, wheat, barley and oats are amongst its choicest products, while as to fruits, it is in itself a perfect paradise, producing in profusion the olive, the vine, the fig, the orange, the lemon, besides deciduous fruits and berries and nuts in unnumbered profusion. No where else does the sugar beet reach the perfection that it does in California. Rice, tea, sugar cane, cotton, licorice, tobacco and bananas even have been grown within its borders. It has a soil peculiarly well adapted to the various kinds of vegetables usually grown in the United States and Europe. The waters of its bays and of the adjacent ocean swarm with the finest description of food fish. It grows many fibres such as ramie, flax, hemp, etc., that are needed by the manufacturers of the world, while the mulberry tree, whose leaves nourish the silkworm is produced throughout the State. It has large areas of pasture land, mountain slopes where countless sheep and cattle can thrive. Its mineral riches have made it a name throughout the world and have promoted

the development of modern arts and industries in other lands than California.

The Mission Fathers, ambitioned founding a civilized Indian State under the suzerainty of Spain, and aimed to bring the native inhabitants to a condition where they should be self-supporting, and where under favoring circumstances they would develop the resources of the land. But it was not to be, and the arts of the politician—first of Spain and then of Mexico—put an end to their labors. Small settlements of Spaniards and Mexicans were made and afterwards of Americans and Europeans—Irish, English, German, Swedes, etc., and at last came the American occupation and the discovery of gold. For ten years subsequently mining for the precious metal absorbed the attention of most of the people. Then agriculture obtained a foothold, soon followed by manufactures. Of course both these pursuits were practiced by more or less people all the time, but they were of minor importance. Fruit growing held a very subsidiary position till the seventies, and indeed, as a great industry, does not go beyond the past twenty years. The wine industry has been growing steadily till a good year now gives us a vintage of thirty million gallons, and other years from fifteen to twenty million gallons.

Our status as a manufacturing community is improving every year, and with the development of our oil and iron resources upon which the future greatness of the State will depend, we will make San Francisco Bay and other sections perfect hives of industry with markets covering one-half the world. Such, in brief, is the standing of the great commonwealth to-day, such its prospects in the years to come. It will have a great share in moulding the destinies of all the peoples of the Pacific Coast and Islands, and through them those of the peoples of all the world.

The rapidity with which the growth of the State will be marked will depend largely upon the conservation and impounding of the flood waters. During the past years the lack of water for the proper development of agriculture has been sadly felt. Of late years this feature has been the subject of much study on the part of the thinking men of the State. An organization with a membership of over 6,000 has been formed by them for the purpose of pushing this work

to completion. It is assured financial aid to this end from both the National and State legislatures. It is a sad commentary on the State that over 90 per cent of its water has been allowed to go to waste in years past.

In the following pages we give in brief the exact standing of California to-day as far as it can be expressed in figures—every important industry having its condition and prospects set forth as succinctly as possible. In all, condensation has been our aim.

THE GROWTH OF THE POPULATION OF THE STATE.

California may not have grown as fast as some of the new states of the west, but when we consider its remoteness from Eastern centers of population and from the high roads of immigration we must consider that under the circumstances the State has done remarkably well. Under ordinary circumstances many long years must have elapsed ere the sparsely settled Mexican province could have become a territory, and probably it would hardly have attained the dignity of a State even as soon as our neighbor, Oregon. But the discovery of gold brought people here from every country on earth and by 1850 a population of 92,597 was assembled within its borders. The further growth of population is illustrated by the following statement:

1850.....	92,597
1860	379,994
1870	560,247
1880.....	864,694
1890.....	1,208,130
1900.....	1,485,052

From these figures it appears that our population has increased 16 fold, while that of the country at large has only increased three fold. It has grown much faster than either New York or Illinois, two great states, the one on the Atlantic Coast, and the other the empire state of the Middle West, as New York's increase has been less than three fold and that of Illinois not quite six fold. Our increase in the first decade was over 400%, while in the second decade, it exceeded 50%; in the third it approximated 60%, between 1880 and 1900, it was about 40%, from 1890 to 1900 about 25%. And

though this last shows a falling off from previous decades, it much exceeds that of the country at large, which was only about 20%. We are satisfied that the next ten years will show a much better record than the past, and the census of 1910 nearly if not quite two millions of people. During the past twenty years the growth of population has been principally in the coast section from Del Norte south, in the great cities, in the lower San Joaquin valley and in Southern California, the latter especially. There is now a general and healthy growth all over the State.

The growth of San Francisco, the metropolis of California, is in some sense indicative of the State at large. Hence the following figures will be generally interesting.

1850.....	30,000
1860	56,802
1870.....	149,473
1880	233,959
1890	298,977
1900.....	342,782

Here we have an increase in the first decade of about eighty-six per cent, in the second about two hundred and sixty per cent, in the next about fifty-four per cent and in the fourth of about twenty-eight per cent. The increase in the ten years between 1890 and 1900 was fifteen per cent nearly. This was much less than expected and was somewhat of a disappointment to our people, but it is accounted for by two causes—one, the increasing number of citizens of San Francisco who seek homes in the beautiful cities around the bay, the other, the succession of dull business years that were experienced between 1892 and 1900. But a change has come over the business situation and the city is filling up fast. It has been estimated in 1901 at 10,000, and if this keeps up, of which there is little doubt, the population of the city will fall a little short of five hundred thousand in 1910. The city has entered on its period of second growth and we fully expect that its population will have reached the million mark during the next quarter century or perhaps sooner. The country around San Francisco contains nearly forty per cent of the population of the State. San Francisco is a county as well as a city and the facts regarding its growth, progress and present condition will be found in brief detail elsewhere. We



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GOVERNOR OF CALIFORNIA

may estimate the population of San Francisco to-day in round numbers at 365,000 and that of the other leading centers of population as follows:

Alameda.....	19,000
Bakersfield.....	7,000
Benicia.....	3,000
Berkeley.....	14,500
Eureka	9,000
Fresno.....	16,000
Grass Valley.....	7,000
Los Gatos	3,750
Los Angeles.	110,000
Marysville.....	4,000
Napa.....	4,500
Oakland.....	69,000
Pasadena	10,000
Petaluma.....	4,500
Pomona	6,000
Redding	3,500
Red Bluff.....	3,500
Redlands	5,500
Riverside.....	9,000
Sacramento	32,000
San Bernardino	7,500
San Diego	20,000
San Jose.....	23,500
San Luis Obispo	4,000
San Rafael.....	5,000
Santa Ana.....	5,500
Santa Barbara.	7,500
Santa Clara.....	3,750
Santa Cruz	7,500
Santa Rosa.....	7,000
Stockton.....	20,000
Vallejo	8,000
Visalia	4,000
Watsonville.....	4,000

THE STATE BY COUNTIES.

ALAMEDA COUNTY.

Alameda may be entitled one of the metropolitan counties of the state as most of its population is strictly metropolitan in the proper

sense of the term. Oakland, Alameda and Berkeley have between them not less than 103,000 people at date of present writing and the number of people within their municipal boundaries is rapidly increasing. It will without doubt be 150,000 by 1910. The water front of Oakland is 14 miles in length and its harbor, when properly dredged, will be an important seat of commerce. Alameda, with the construction of the canal proposed between Oakland harbor and the estuary of San Leandro, will be an island and a seat, not only of manufactures and commerce, but will boast of some of the finest mansions in the State.

The country possesses rich, black adobe soil and an unusually large proportion of its 737 square miles is devoted to fruit and hop culture and wines and grape growing. It is famous for its vegetables, much of which, being canned, find their way to all parts of the world. The price of land is from \$250 to \$500 per acre.

The county has abundance of coal of the quality known as lignite and possesses undoubted indications of petroleum.

It has several important manufactures and industries, iron, lumber, flour, cotton goods, etc.

ALPINE COUNTY.

Alpine with 836 square miles has a sparse population. It has several fertile valleys and forests of valuable timber. It produces some apples and about 30,000 lbs. of butter annually. It is a stock raising county principally. It possesses some grand and wonderful scenery.

AMADOR COUNTY.

Old Amador is one of the most famous counties in the world, principally noted for its inexhaustible auriferous deposits. It has an area of 650 square miles. The western section has numerous fertile valleys. Hay, grain, alfalfa, and vegetables for home consumption are raised. Fruit raising is becoming a great industry. Some splendid oranges and lemons are raised there. The mountains contain great forests of sugar and white Pine, spruce and cedar. It has valuable deposits of copper, marble and other building stone, coal and aluminous clay.

BUTTE COUNTY.

Butte has a large area and most extensive and valuable resources.

Its mountains have extensive and valuable forests of sugar pine, the product of which is flumed down to Moore's Station. The county is well watered and has rich black soil for cereals and red soil for fruits. It is a large wheat and fruit producer, and the valley lands give four crops of alfalfa in the year. It produces splendid oranges and lemons. Fruit canning is amongst its industries. It is a large stock raising county. It was a great mining county and for years produced \$20,000,000 worth of gold annually. Its industries include saw milling, flour milling, fruit and vegetable canning, etc. Its lands range in value from \$10 to \$100 and even \$250 per acre.

CALAVERAS COUNTY.

Calaveras with its 971 square miles has been famous of old for its gold mines and indeed is famous still. The high altitudes are densely timbered. The red soil of the foot hills is well adapted for fruit and grain. Most of its agricultural products find a good market at home. The county raises splendid fruit and has some fine vineyards. It has 13 copper and 2 iron mines and one producing mineral paint.

COLUSA COUNTY.

Colusa down in the valley has an area of 1202 square miles, and is noted for her grain harvests. The soil is a loose sandy loam and adobe and rich and fertile in the foot hills. Although devoted principally to wheat, fruit culture has been carried on with success. It has a drying and packing establishment. Colusa has a fine flouring mill. It has rich oil indications and drilling has been prosecuted during the past year. Its oil is of a superior quality. Land is worth \$10 to \$50 per acre.

CONTRA COSTA.

This county being located on the bay and the San Joaquin river, its situation is peculiarly favorable for marketing its products. Its area is 734 square miles. It has 110,000 acres of rich alluvial and tule lands. Grain raising is the principal industry although fruit is not neglected. It raises much blooded stock. Its coal mines have long been worked and support a fairly profitable industry. It is quite a manufacturing county, with its flour mills, manufactures of explosives, canneries, packing houses, planing mills, paper mills;

smelting works, etc. A new city, Point Richmond, the terminus of the Santa Fe Rai'road, has been established during the past year. A smelting plant has recently been established at Bay Point, while the Peyton Chemical Works is another new establishuent.

DEL NORTE COUNTY.

Located at the extreme northwestern corner of the State, Del Norte, with its 1546 square miles, has been noted principally for its magnificent forests of redwood timber, but its valleys possess a fertile soil. It is favorable for dairying and ships annually 600,000 lbs. of butter to the San Francisco market. There are valuable canneries on the Klamath and Smith Rivers.

EL DORADO COUNTY.

El Dorado with its 1890 square miles and its enormous yield of gold has been one of the history making counties of the State. The mountains are clothed with heavy forests of valuable timber. Wheat, barley and hay are raised in the lower plains and foot hills. Large quantities of the finest fruits are annually produced. The olive and the orange are amongst its productions. Cattle and sheep are extensively raised. The first discovery of gold in 1848 must be credited to El Dorado and it is a large producer still. The industrial interests of the county received considerable development last year. A door, sash and window factory has been established in Placerville. The slate industry is also being developed largely. Its marble ranks with the finest in the State and it has excellent clay for brick making. Land is from \$10 to \$20 per acre, according to location.

FRESNO COUNTY.

Fresno, from whatever point of view we regard it, is one of the most favored counties of the State. It is noted as a wheat and fruit producer and it has added to this the credit of being one of the greatest oil producing sections of the State. Its area is 5940 square miles. Fresno City with 16,000 people, is a great railroad center and has a large population which is rapidly increasing. The mountains are largely covered with splendid sugar pine timber. Most of the raisins produced in the State are the product of Fresno County. It is also a large wine producer. It is famous for its big trees, the *Sequoia Gigantea*. The mountains are full of minerals. Amongst

its manufactures are lumber, flour, raisins, canned and dried fruits, doors and sashes. An agricultural implements factory and a furniture factory are amongst the new projects in the industrial field.

GLENN COUNTY.

Glenn County, named after Hugh J. Glenn, the wheat grower, has an area of 1248 square miles. It has a fertile soil and is well watered by the great canal that leaves the Sacramento about 10 miles north of Willows. It is and has been one of the great wheat growing counties of the world, is annually making headway in deciduous fruit and has quite an area planted to citrus fruit trees. The western hills are in places covered with wild oats, clover and bunch grass and it is a fine country for stock. There are saw mills in the mountains. Land sells at \$10 to \$50 per acre.

HUMBOLDT COUNTY.

The area of this county is 3,507 square miles. It contains the greatest area of redwood timber lands on the globe, nearly three-fourths of a million acres being thickly covered with this valuable lumber. About one-fifth of the area consists of good agricultural land, while a little over one-fifth is devoted to stock raising and dairying. The soil is very fertile, especially that of the Eel River valley, about Humboldt Bay and near the Klamath. This is a great wool growing county, yielding about 900,000 lbs. of splendid wool annually. The county has 200,000 acres of pine, spruce and cedar and the hills are covered with white oak. Indications of oil are found but there have been no practical results as yet. Besides the great lumber and shingle mills, the county has ship yards, planing mills, sash and door factories, creameries, and woolen mills. Iron works and a foundry have also been erected. Its lands are worth \$10 to \$100 per acre.

INYO COUNTY.

In area, Inyo is a small State in itself, boasting 10,224 square miles. It is east of the Sierras and has many high mountain peaks such as Mount Whitney, 14,898 feet high. The area of agricultural land is small. There is a fine quality of marble. Soda, borax and sulphur are found in almost inexhaustible quantities. A great deal of argentiferous galena can also be found. It is a land of moun-

tains. Prices of land range from \$1.25 for government land to \$10 and \$20 per acre for other land. This is the banner honey raising county.

KERN COUNTY.

This county has an area of 8159 square miles and is larger than Connecticut, Delaware and Rhode Island and almost as large as Massachusetts. It has wonderful resources and is one of the richest inland counties in the State. Much of the soil is of unsurpassed fertility. It has an extensive and costly system of irrigation, consisting of many canals and laterals. The mountains have large forests of pine, redwood, cedar, fir, spruce and hemlock. Large areas are devoted to fruit culture and much raisins are produced. Wheat is the great grain crop, barley coming next. Alfalfa is extensively cultivated. Stock raising is a great industry here. But petroleum mining, which as an industry has come to stay, is now the greatest and has added millions on millions to the wealth of the county during the past two years. Shipments of live stock from this county have added in value a million dollars a year. The value of taxable property increased \$5,000,000 from 1900 to 1901. Millions of dollars have been made in the oil industry during the year. The districts are Kern River, Sunset, McKittrick and Midway. Branch railroads link all these districts with the main lines of road throughout the county.

KINGS COUNTY.

The county of Kings, one of the State's new counties, has an area of 1257 square miles and is a land of diversified industries. Stock raising, dairying, fruit growing and farming are making rapid strides. Canneries and wineries have been established.

LAKE COUNTY.

This county has an area of 1332 square miles. It is a mountainous country, a land of lovely lakes and enchanting valleys. It has excellent valleys of great fertility. Its mountains are clothed with fir, sugar pine, cedar, and oak and it has quite a number of saw mills. It has much mineral wealth but its principal mining industry is quicksilver. Unimproved land sells at \$30 to \$50 per acre and improved from \$50 to \$100. Near the towns better prices

prevail. One of its principal industries is the growth and canning of beans. The bottling and shipment of mineral water was very large during the year.

LASSEN COUNTY.

This is a county of mountains. Its area is 4750 square miles. About one-third of this area consists of valleys and foothills. There are extensive systems of irrigation in this county. Grain and fruit growing are flourishing industries. Splendid apples are raised here. Stock raising and dairying are amongst the leading pursuits. There are about 800,000 acres of splendid timber land. Improved land with water sell from \$25 to \$50 per acre and in some instances for even \$100.

LOS ANGELES COUNTY.

This in many respects is one of the most notable counties of the State. The county's capital, Los Angeles, was one of the oldest settlements of white people in California and for a long time held the position of being the leading city in Southern California. It is now the second largest city in the State and one of the finest in America. The area of the county is comparatively small—only $3957\frac{1}{2}$ square miles, but it is a great producer of citrus and deciduous fruits, of wine and petroleum. In the latter it has led all the rest of the State. Within its borders the first discovery of gold was made by white men. About four-fifths of the area of the county is capable of cultivation. It possesses several varieties of soil all producing large crops with irrigation. It has a large grain area and produces fine sugar beets. It grows fine crops of winter vegetables. It produces large quantities of apricots, prunes, and deciduous fruits generally and is noted for its big crops of strawberries. Much fine honey is made in the county. It has an ostrich farm, the only one in the United States. Copper, iron and coal have been found within its borders. For railroad facilities it is equalled only by few counties in the State. It has large and flourishing manufactures. It has a fine climate and beautiful scenery and attracts thousands of tourists yearly.

MADERA COUNTY.

This one of the new counties of the State has an area of 2140 square miles. It contains immense forests of sugar pine and in

mineral resources promises to take a leading rank. The iron ore of the Minarets is likely to create an industrial revolution in the State when it is properly exploited. A company with an immense capital has been formed to do this. The lumber business is the principal one in the county and has received a great impetus last year. Amongst the industries may be numbered a box factory and an establishment for the manufacture of matches. With the revival of the lumber industry and the development of its iron and galena areas, Madera will be a most prosperous county.

MARIN COUNTY.

Just opposite San Francisco, Marin County, with its 516 square miles of territory is daily growing in importance. San Rafael, its capital, is one of the handsomest cities in the State, while Sausalito and its suburbs are growing with the growth of the great cities around the Bay of San Francisco. There are some magnificent redwoods within the limits of the county and it possesses an unusual amount of beautiful scenery, that of Mount Tamalpais being especially notable. It has a large area of cultivated land and is blessed with a fertile soil. Dairying and raising of vegetables are the two principal industries. It produces a great deal of excellent fruit. There are good oil indications and rich copper ore has been found within its borders.

MARIPOSA COUNTY.

Mariposa has an area of 1580 square miles. Most of the county consists of mountains covered with immense forests of sugar pine. The Mariposa Big Tree Grove with its giant Sequoias is one of the wonders of the world, as is also the famous valley of Yosemite. Mariposa is devoted to mining and stock raising principally. It has great adaptability to fruit growing. Lands for farming vary in value from \$17 to \$35 per acre.

MENDOCINO COUNTY.

This county with its 3460 square miles is one of the great redwood districts of the State and contains magnificent forests of that valuable timber. That and wool of fine quality are its two principal products. It is also noted for its hops and its dairy interest, while fruit growing has made considerable progress. It has about 900,000 acres of redwood and the standing timber is estimated at

11,000,000,000 feet. The redwood belt runs from north to south through the county and is from 15 to 30 miles in width. It ships largely of railroad ties and tan bark. Its coal deposits are believed to be very extensive, having been traced in the county and beyond it for a distance of 100 miles. Quicksilver, gold and silver, asbestos and copper are also found. Land commands from \$25 to \$50 per acre. The tan bark industry has brought \$100,000 to the county during 1901.

MERCED COUNTY.

Merced with an area of 1750 square miles is one of the great grain producing counties of the State. It is principally one vast plain with a rich soil. A considerable portion is irrigated and artesian water can be had at depths varying from 100 to 200 feet on the east side and from 200 to 400 feet on the west side of the San Joaquin River. There are five crops of alfalfa raised yearly with irrigation. All the fruits of the State are produced here. There are large numbers of cattle and sheep raised in this county. The price of land varies from \$10 to \$100 per acre, according to location etc.

MODOC COUNTY.

Modoc has an area of 4097 square miles. More than one-half its area consists of mountain lands. A large portion of the area is capable of cultivation and possesses a rich soil. There are large tracts covered with cedar and sugar pine. Stock raising is the principal industry. There are large deposits of aluminum and coal and indications of oil. The sash and door industry is one of those carried on in the county.

MONO COUNTY.

Mono has 2796 square miles. It consists principally of mountain masses, lakes and alkali flats but there are rich valleys in the west of the county. It was once the seat of a great mining industry with Bodie as its center. There are large quantities of sugar pine and tamarack on the mountains. Stock raising is the principal industry. The mining industry of the county has undergone considerable development during the past year.

MONTEREY COUNTY.

Monterey has 3450 square miles of fertile producing territory for the most part. The valleys, the Salinas Valley principally, has rich black adobe alluvium, while the hills are well suited for the raising of live stock. All descriptions of fruit grow in the valleys. The Salinas Valley has about 1000 square miles of rich grain and fruit lands. Grain, beets and fruit are the principal products. Stock raising is also flourishing. There is a considerable tract of redwood near the Coast. The county has extensive deposits of oil, asphaltum, copper, gypsum, and black oxide of Manganese as also coal and glass sand is abundant on the beach near Monterey. The waters of Monterey Bay swarm with food fish, of which there are 150 species which are caught in the vicinity. Some of the most beautiful seaside resorts in the world are found on the coast of this county, especially on Monterey Bay. The sugar beet industry is one of the most important of the county. Abalone canning factories have been established near Point Sur and Point Lobos, a creamery at Castroville and one at Salinas and a salmon cannery at Monterey, all within the year.

NAPA COUNTY.

This is one of the most fertile and productive counties of the State, though its area is only 800 square miles. It is also quite famous for its oil as well. It is sheltered on all sides by mountains and is as beautiful as it is fertile. It possesses four different descriptions of soil. One, a decomposed volcanic formation is excellent for grapes and produces as fine wine as is made from grapes grown in similar soil along the slopes and lateral valleys of old Vesuvius. The leading industry of the county is grape growing and wine making, but a great deal of deciduous fruits are grown and some citrus as well. Stock raising is one of the industries of the county. Fir, pine, cedar, madrona and other timber is found on the mountains. Napa contains some of the best quicksilver mines in the State. The oil found in Beryessa Valley is generally superior to that found in the southern part of the State. Unimproved land sells from \$7.50 to \$150 an acre and improved at \$100 to \$300 with some bearing orchards, etc., for which \$500 an acre is asked. The

county has many industries besides that of wine making, such as canning and drying of fruit, tanning, flour milling, brandy distilling, etc.

NEVADA COUNTY.

Nevada county, one of our great mining counties, has an area of 958 square miles. About one-third of the county, the western portion lying next to the Sacramento Valley, is suitable for agriculture, while the middle portion is eminently fitted for fruit culture. This section also abounds in mineral deposits. The eastern and mountainous parts have an inexhaustible water supply and splendid reservoir sites. The mountains are clothed with noble forests, the principal being sugar and white pine, fir, spruce and cedar. The average cut of the Truckee basin is about 50,000,000 feet annually. The high Sierras in summer are clothed with nutritious grasses and stock raising and dairying are profitable pursuits. Grass Valley is one of the great mining districts of the State and the quartz lodes of that section have yielded over \$100,000,000 in gold, and still this industry is just at its inception. The storage reservoirs cover 2,298 acres and have a capacity of 6,000,000,000 gallons. Three crops of alfalfa and red clover are raised in a year still leaving a part of the time for pasture. There are many industries carried on in this county—mining, fruit culture and lumber being the principal. Amongst Nevada county's industries are a great paper mill at Floriston and a big box factory at Hobart Mills.

ORANGE COUNTY.

The county of Orange has an area of 780 square miles. It is one of the great fruit growing counties of the south. The beet growing industry has also established a permanent location here. The wine industry is one of the county's specialties. It has many profitable raisin vineyards. While it is one of the centers of the citrus fruit industry; it also produces large quantities of deciduous fruits of all descriptions. Most of the area of the county is cultivable. Large quantities of honey are raised here. In the mountains are found deposits of galena, silver, quicksilver, etc. Some fine racing stocks are raised here. Amongst the product of this county are bitumen,

limestone, cement, pottery clays and gypsum. There is a large beet sugar factory at Los Alamitos. This county ships one-half of all the vegetable shipments of Southern California and one-fourth of those of the State. It is also a big oil producer.

PLACER COUNTY.

This, one of the most flourishing counties of the State, has an area of 1484 square miles. The western part where the soil is a loose gray granite loam is devoted to grain growing. Fruit growing and mining are its principal industries. It produces some of the earliest and finest oranges in the State. About one-sixth of the county's area—140,000 acres, is devoted to agriculture. The eastern part of the county is mountainous and has large forests of sugar pine, fir and other timber. There are great granite quarries at Rocklin and a large manufacture of pottery at Lincoln. The country is one of the largest gold producers and has iron, copper and other mineral deposits of great value. The price of land varies from \$20 to \$100 per acre and in some of the fruit sections it goes as high as \$300 to \$500 per acre.

PLUMAS COUNTY.

The area of Plumas is 2361 square miles. This is a county principally of mountains, but containing many fertile valleys. The only farm products raised are those needed for local consumption. The same is true of fruit. Apples grow here to perfection. There is abundance of natural grasses and stock raising is one of the principal industries. The county produces splendid butter. There are magnificent forests of sugar and white pine, fir, spruce and cedar. The principal industry is gold mining. The timber belt is being penetrated by railroads and the Plumas copper belt extends north and northwesterly about 10 miles.

RIVERSIDE COUNTY.

This county is one of the centers of the citrus growing industry of the State and within an area of thirty square miles surrounding the city of the same name, 5535 cars of oranges and 250 of lemons were shipped during the past season. The county has an area of 7008

square miles. The northwestern portion consists of the greater part of an area of a thousand square miles of vine clad and orchard covered valleys and orange groves that has been styled "The Italy of America."

SACRAMENTO COUNTY.

Though one of the smallest counties of the State, containing only 1057 square miles, Sacramento is one of the richest and most prosperous. Sacramento City, the chief town of the county, is the capitol of the State and is the seat of a growing commerce and diversified industries. Its trade extends all through the Sacramento Valley and even into Oregon and Nevada. The county consists principally of a rich alluvial plain of wonderful fertility. There is much reclaimed land in the southwestern portion of the county which is worth \$1000 an acre. The principal products are wheat, barley, hay, fruit, vegetables and wine grapes. The annual wine yield has been large for many years. The county grows some splendid oranges. Sacramento City is a great railroad center and has a trade of \$80,000,000 a year. The city and county have been especially prosperous during the past year. Wheat and hay land is worth \$50 to \$100 per acre and fruit land \$500 to \$1000 an acre, except in the rich tule lands where it is much more valuable.

SAN BENITO COUNTY.

The area of this county is 1476 square miles. It is a mountainous land but with a number of very fertile valleys. There is a large amount of high land suited for pasturage. There is a considerable extent of land devoted to fruit growing; stock raising is a thriving business. It is noted for its quicksilver product and the New Idrid has yielded altogether about 190,000 flasks worth \$9,750,010. Discoveries of new and valuable deposits of Cinnabar have been made during the past year. Antimony, gypsum and other minerals are found. The oil industry of the county is promising.

SAN BERNARDINO COUNTY.

This is the largest county of the State, having an area of 20,160 square miles, greater than that of many a kingdom. A large part

of the area consists of mountains and wild rugged sandy deserts but there are large tracts of the finest agricultural and fruit lands under the sun, while its mineral wealth is so great that it can hardly be estimated. Nearly half a million acres of land are or can be irrigated. The amount of grain grown is small but the output of citrus and deciduous fruits is enormous and the beet crop is of great annual value. The county yields every year a large amount of wine. There are heavy forests of sugar pine, fir and spruce in the mountains. Borax is one of the principal mineral products while gold and silver, plumbago, soda, coal, asbestos, iron, lead and copper are also found. Slover Mountain, near Colton, is an almost solid body of marble. Oil too, is found. There are many new industries starting up. There is a large cement works at Colton, while the county produces a good deal of lime. There will be an immense horse farm at Victor.

SAN DIEGO COUNTY.

This, one of the most promising counties of the State, has a large area—8,800 square miles. With its principal city, San Diego, it is bound to become one of the most important. San Diego has one of the finest harbors in the world and is bound to have its share of Pacific commerce. About two-thirds of San Diego county, the eastern part, is desert, but with water it has great possibilities. The mountains west of that have some splendid valleys where deciduous fruits may be raised and that are full of minerals. The western section of the county, the mesas or table lands and valleys and the hills intervening, are very fertile. The county has some splendid reservoirs and is gradually all being subjected to irrigation. There is considerable stock raised. It produces a large amount of honey. Besides the usual citrus and deciduous fruits, it has guavas, bananas and limes. India rubber, cassava and camphor flourish. Amongst its minerals are gold, silver, copper, lead, coal, gypsum, asbestos, mica, ocher, salt, alum, borax, quicksilver, sulphur and iron. It has quite a number of flourishing industries, amongst which may be reckoned the manufacture of citric acid, lemon extract and lemon juice from the lemon.

The County Assessor in his returns July 1st, 1901, gives the following data:

"FRUIT TREES GROWING IN THE COUNTY.

	No. Bearing	No. Non-bearing
Apple.....	40,000	20,000
Apricot.....	46,500	27,700
Cherry.....	3,000	2,500
Fig.....	16,000	11,500
Olive.....	40,000	82,500
Peach.....	60,000	80,000
Pear.....	18,000	12,500
Prune, French.....	40,000	70,000
Prune, other kinds.....	6,000	4,000
Lemon.....	170,000	250,000
Orange.....	75,000	45,000
Almond.....	5,000	14,500
Walnut.....	4,500	16,000
Grape Fruit.....	8,000	12,000
Total	<u>532,000</u>	<u>648,200</u>

The number of acres sown to hay and grain for the crop of 1901 being as follows:

Wheat.....	10,000	acres
Oats.....	4,000	"
Barley.....	6,000	"
Corn.....	200	"
Hay.....	25,000	"
Total.....	<u>45,200</u>	acres

The acres of grape vines being as follows:

For table.....	275	acres
" raisins.....	4,850	"
" wine	450	"
Total	<u>5,775</u>	acres

During the year 1901 San Diego county shipped out 100 car-loads of honey valued at \$100,000, and during the same period 300,000 boxes of apples were gathered from the Julian apple belt. The shipments of oranges were about 250 cars, lemons about 750 cars.

The value of the gold output though large I am not able to give. Considerable mining is going on throughout the county, not only

for gold but also for copper, while large shipments are being regularly made of lepidolite from the deposit near Pala, and during this same period a very valuable deposit of tourmaline of the very finest quality was uncovered near Mesa Grande. At this writing some eight or ten wells are being sunk in different parts of the county for oil and the prospects are said to be good for finding a large flow.

H. P. Wood, Secretary."

SAN JOAQUIN COUNTY.

This, one of the most fertile and richest counties of the State, is of comparatively small area, only 1370 square miles. It contains the prosperous and enterprising city of Stockton, which has a great commerce and thriving manufactures, especially of agricultural implements, where it takes the lead as to value. It is one of the great wheat counties of the State. In Stockton are located immense flouring mills which have a capacity of nine thousand barrels a day. It has extensive fruit canneries and woolen factories. Along the Sacramento and San Joaquin Rivers are wonderfully fertile tule lands and the islands in the rivers cannot be exceeded for productiveness. One-fifth almost of the lands of the county—150,000 acres—are in the delta of the San Joaquin and all are under cultivation. Most of the rest of the county consists of level land of great fertility. Artesian water in most places can be found at 500 feet deep and irrigation facilities can be had for nearly all the county lands that require them. The county is a large fruit and wine producer—of the latter the yield in 1901 was 2,000,000 gallons of sweet and 1,000,000 gallons of dry. It produces raisins of fine quality. A great deal of stock is raised in the county. The quantity of vegetables raised last year was surprising—amongst other articles 1,800,000 sacks of potatoes on the islands. There will be three immense asparagus canneries erected on these islands during the present year. Foothill lands sell at \$20 to \$25 an acre and valley lands, \$30 to \$50. This is for unimproved lands, improved being from \$100 to \$300 an acre and even higher—as high as \$1000 per acre on the islands.

SAN LUIS OBISPO COUNTY.

This county has an area of 3573 square miles. The west section consists of foot hills and lovely valleys, running from the central chain of the Santa Lucia Mountains which forms its backbone, while the eastern part has a large number of similar valleys, but larger. The soil is adobe and sandy with red lands in the foot hills. Cereals, beans and fruits are the principal products. Stock raising is a very profitable industry. This is a great dairy county. There are important fisheries on the coast. Its principal minerals are quicksilver, copper, onyx, chrome, coal, gold and silver and asphaltum. Oil will be a very important product. During the year there has been an addition of 200 flasks a month to the quicksilver product.

SAN MATEO COUNTY.

This county which is so close to San Francisco that it may almost be considered metropolitan, and some of the most important towns of which are practically suburbs of the great city has an area of only 425 square miles. The Sierra Morena divides the county in about halves. While some wheat, barley, oats, beans, etc. are raised, the principal interests are vegetable cultivation and stock raising. Fruit growing is only carried on in a very limited degree. In the southwest of the county, in what is known as the Big Basin, are 100,000 acres of magnificent redwoods. The county has many important industries, amongst which may be noted the packing houses at Baden, as also the pottery works and paint works. Oil indications have been found near the coast.

SANTA BARBARA COUNTY.

Santa Barbara, one of the most beautiful and fertile counties of the State has an area of 2,450 square miles. The Santa Ynez Mountains divide the county east and west, while a large portion of the northwestern part is mountainous also. There are four important valleys in the northern part of the county—Santa Maria, Lompoc, Los Alamos and Santa Ynez. Carpenteria, Montecito, Goleta and Ellwood make up Santa Barbara valley in the south.

Besides this there are the islands, 150,000 acres or about one eighth of the area of the county. The lower Santa Barbara valley produces lima beans, and fresh berries and vegetables all the year around. Beans, potatoes, wheat and barley are the staples of the central and northern parts of the county. All varieties of flowers and shrubs grow in the greatest profusion. The cultivation of the olive is fast becoming a feature of Santa Barbara industry and the best olive oil in the world is made there. The county produces a large quantity of best fruit, both citrus and deciduous. Stock raising is amongst its industries. The coast has valuable fisheries. Drying abalone meat and preparing the shells for export are important industries. Gold, silver, copper, quicksilver, manganese, gypsum, asphalt and bitumen, are found in this county. It is a large producer of petroleum. The shipments of oranges, lemons and walnuts in 1901 were large. Beet growing is a thriving industry. The county has the largest asphaltum deposits in the world.

SANTA CLARA COUNTY.

This is one of the richest counties in California. It has an area of 1355 square miles devoted principally to fruit growing. A great deal of wine was made in the county at one time but the quantity has fallen off of late years. It was at one time famous as a quicksilver producer, the New Almaden being noted throughout the world, but it has taken second rank of late years. The New Almaden and the Guadalupe still help to keep up the reputation of the county. As a fruit producer it has of late years won its well earned fame. The prunes produced are sought all over the United States and are shipped in larger or smaller quantities all over the civilized world. Besides this, it produces a great quantity of other dried fruits and ships heavily of green fruits to the markets of the East. Its capital, San Jose, is one of the handsomest cities in America. It and Santa Clara are renowned seats of learning. The county boasts the Stanford University, one of the most magnificently endowed in the world, the Santa Clara College, which has celebrated its semi-centennial, the State Normal School, the Academy of Notre Dame and the University of the Pacific. The Lick Ob-

servatory is on Mount Hamilton, about 15 miles east of San Jose. It has the largest refracting telescope in the world. The county's eastern boundary is west of the coast range, its western, the crest of the Santa Cruz mountains. The famous valley lies between. The county has a considerable area devoted to wheat, barley, etc., though most of the land so utilized in former years has since been planted with fruit trees. Water for irrigation when needed can be had at a depth of 60 to 100 feet. Oil has been struck in county. There are deposits of chromite, bitumen, rock, limestone, and coal. The sum of \$20,000 has been spent by the Government in improving Alviso Slough so as to improve the water transportation to San Jose. Besides a prune crop of 85,000,000 lbs. in 1901 there were of other dried fruits, 4,300,000 lbs. and of green fruit shipped, 20,000,000 lbs. The fruits canned were ten millions $2\frac{1}{2}$ lb. cans. Then there were 5,430,000 gallons of brandy. The value of the fruit crop was \$4,500,000. There were 12,695 acres of wheat, 13,920 acres of barley, 31,050 acres of hay, and 12,900 acres of grapes.

SANTA CRUZ COUNTY.

The area of this county is 6425 square miles. Santa Cruz, the county seat, is the largest city on the coast between San Francisco and San Diego. It is celebrated as a summer resort and for the beauty of its surroundings. A great part of its area is mountainous, covered in part with noble redwoods which are here near their southern limit. One magnificent group near the city of Santa Cruz contains some of the largest trees in the State outside the celebrated big trees. The mountains of the county form a crescent around the bay of Monterey and between these mountains and the ocean are high, wide, grassy plateaus forming an ideal country for stock raising and dairying. The wide valley of the Pajaro forms a splendid farming country where cereals of all kinds, fruits and beets flourish. This is a great berry county and near Santa Cruz strawberries have yielded as high as \$400 an acre. It is estimated that the forests of the county contain a billion feet of redwood. The fishing industry is one of the notable ones of this county. The beet sugarie at Watsonville was long the leading one

of the State. One of the products of the county is bitumen of which large shipments have been made. The leading manufacturing industry is the manufacture of powder near the city of Santa Cruz. Here the California Powder Works for 39 years have manufactured black and sporting powder and during the Spanish war and for many years past cannon and smokeless — the latter the best in the United States. For several years the United States has purchased one-half of its powder supply here. Tanning of leather and the production of lime have all been important industries. There are large beds of cement in the county which will doubtless be developed at some future day. Gold has been found in several places and the sea sands have been found to be more or less auriferous. The county produces some very fine wines. It has other important industries. It has 279,540 fruit trees in full bearing. During the past year they have shipped from the neighborhood of Watsonville 2,000 cars of apples.

SHASTA COUNTY.

Shasta, with its 4,050 square miles, is rich in minerals, especially copper and iron. Most of the county consists of mountains and table lands but the valleys and table lands have very rich soil well suited to fruit and cereals. There is an immense body of valuable timber on the mountains. Nearly all the copper produced in the State comes from Shasta, as does most of the silver and a considerable quantity of gold. It has numerous undeveloped deposits of iron ore. Fruit lands run from \$20 to \$100 per acre, according to location, etc. The mineral output reached in value \$8,500,000 for 1901. Many new copper locations have been or are being developed by Boston people. An immense power plant has been built at Mill Seat Creek, 20 miles southeast of Redding.

SIERRA COUNTY.

This county with its 1902 square miles is in many respects one of the most interesting in the State. It has long been famous as a gold producer and gold mining is still its principal industry. The mountain regions embrace 581 square miles and are covered with an inexhaustible supply of sugar and white pine and other lumber

It has a great deal of fine fertile land and Sierra Valley is one of the most beautiful and productive in the whole State. Cereals for home consumption are grown and fine fruit, including fine apples, is raised. Unimproved valley lands sell at \$5 per acre. Grain and hay land sells for \$30 per acre. Amongst the other minerals of the county is plumbago which is being worked at good profit.

SISKIYOU COUNTY.

This county, one of the bulwarks of the State to the north, is one of the largest in California, having an area of 6078 square miles, largely mountain and forest, only 576,000 acres or one-seventh being capable of cultivation. The sugar and white pine and other woods are the crown and glory of the mountains and form a source of great wealth in themselves—over 100,000,000 feet being cut annually. The mighty dome of Shasta, a monarch among mountains, towers grandly over the plain at its base and over the surrounding summits 14,511 feet above the sea level. It stands at the head of the Sacramento Valley and its top is crowned with perpetual snow. The yield of grain is larger in this county than anywhere else in the State except the reclaimed tule lands and the islands of the Sacramento and the San Joaquin. Apples of excellent quality form the principal fruit product. There is a considerable stock raising industry. The county is a large gold producer. Quicksilver is also a leading product, but was not during 1901. Iron, coal, copper, marble, onyx and building stone are also amongst its products.

SOLANO COUNTY.

Solano has an area of 828 square miles and is one of our bay counties. The valley and foothill lands of the county are very fertile and it is principally devoted to grain growing and fruit raising. Vallejo is the chief city and is the seat of many important industries. So is Benicia, which has one of the largest agricultural implement works in the West. The Mare Island Navy Yard, where the largest ships of war can be repaired, and the U. S. Arsenal are notable features of the county. Dairying and stock raising are important industries. Onyx and marble are found in

this county and there are oil indications. The manufacture of building stone and the reopening of the St. John Quicksilver mine will add largely to the prosperity of the county.

SONOMA COUNTY.

This beautiful and fertile county has an area of 1540 square miles. There is no part of it that cannot be utilized. Its 100,000 acres of mountain land can be used for pasturage and it has 80,000 acres of splendid redwood timber. It has over 22,000 in vines and an immense fruit interest. Its fruit output is partly shipped in a green state, partly canned and dried at local canneries and dryers. Its average hop crop is 2,000,000 lbs. It produces cereals and vegetables largely. It has large and profitable dairy interests. It has many flourishing industries. Amongst its woods are laurel and madrone. It also produces tan bark. Quicksilver is the principal mineral product. Gypsum, ochre, potter's clay and basalt are also produced. The mountains abound in mineral springs, the most famous of which are the Geysers. The yield of wine in 1901 was 6,000,000 gals. and of brandy 100,000 gallons, while 15,000 bales of hops were produced.

STANISLAUS COUNTY.

The area of this fertile county is 1480 square miles. It takes up what may be called the heart of the Northern San Joaquin Valley, from the foot hills of the Sierras to the mountains of the coast range. It consists principally of a vast plain of wonderful fertility. It is a great grain county, sometimes producing as much as 5,000,000 or even 6,500,000 bushels of wheat in a year. Considerable fruit is raised and a good deal of attention is given to the raising of stock, especially of fine horses. Farming lands sell at \$25 to \$50 an acre, and good fruit lands at \$75 to \$100 per acre.

SUTTER COUNTY.

Sutter is one of the most fertile counties of the Sacramento Valley. It has an area of 611 square miles. It is nearly all a great fertile plain with the exception of the Marysville Buttes

which furnish excellent grazing. Wheat farming and fruit raising are the principal industries, but there is a great deal of live stock raised. Fruit lands not improved are worth \$50 to \$150 an acre, improved, \$200 to \$400 an acre—grain land \$40 to \$75 per acre.

TEHAMA COUNTY.

Out of 3200 square miles, Tehama has about 2000 square miles of mountains and 795 square miles of foot hills. But, although the extent of land that is ordinarily devoted to farming is limited, it is very productive, bearing large crops of grain and other cereals. In an average year it produces 1,500,000 bushels of wheat. It has immense crops of alfalfa. Its peanut crop is over 1,000,000 lbs. a year. It has, at Vina, the largest vineyard in the world—one of 5000 acres. In the mountains is a great belt of sugar pine which has produced 20,000,000 feet annually. This is a favorite stock section and large amounts of wool are shipped annually. Large quantities of fruit are produced and sent out of the county to Eastern markets.

TRINITY COUNTY.

Trinity county has an area of 3276 square miles, most of which is mountainous. It has, however, some fertile valleys. It produces cereals and fruit, mostly for home consumption. It has an immense belt of sugar pine in the mountains. Its principal industry has been mining and it used to produce gold valued at four to five million dollars a year.

TULARE COUNTY.

This county has an area of 4935 square miles and in it are located the Big Trees. Most of its area consists of mountainous country—one-third of which can be cultivated. Mount Whitney, 15,046 feet, the highest mountain in the United States, is in this county. The soil is rich and with sufficient rain or irrigation, produces wheat and fruit in abundance. There is a great irrigation system. The cost of irrigation is about \$1 per acre for the first and \$.50 per acre thereafter. The yield of alfalfa is enormous. Good fruit trees yield \$100 per acre profit. The raisin industry is

flourishing, as is also the wine industry. Stock raising is an important industry. There are vast forests of sugar and white pine. Gold, slate, marble, coal, plumbago, silver, iron, copper, lead and antimony are amongst its minerals. There are oil indications also. The price of land varies from \$50 to \$150 an acre and in remote sections at \$25 to \$150 per acre. Pasture lands sell at \$5 to \$20 per acre.

TUOLUMNE COUNTY.

This, one of the famous golden counties, Old Tuolumne, has an area of 2232 square miles. It is nearly all mountains and foothills. It has many fertile valleys and the beautiful Hetchy-Hetchy Valley rivals the Yosemite. A belt of the most magnificent sugar pine, cutting 500,000 feet to the acre, runs through the county. While some cereals and fruits are raised, gold mining is the principal pursuit. There is some stock raising in the county.

VENTURA COUNTY.

Ventura county has an area of 1850 square miles. It has hitherto been noted principally for the richness of its oil deposits and its wells have been productive almost ever since petroleum was discovered in California and have made some of our State's millionaires. A great part of its surface is covered with mountains which, in the north, rise to heights over 6000 feet. About one-half the area of the county is composed of arable land which is very fertile. Wheat, barley and beans are the chief agricultural products. The Lima bean is one of the county's staples. There are a large number of industrial establishments in the county, prominent amongst which are flouring mills and oil refineries. The oil is piped to tide water. The valley possesses a rich inexhaustible loam of from 10 to 150 feet deep. Every fruit tree that grows in the State flourishes here—the grape, the olive, the fig, the walnut, the orange, the lemon and every description of deciduous fruit. This is a great county for honey which is collected every month in the year. The annual product is about 3,000,000 lbs. Gold, asphaltum, bitumen rock, limestone and brimstone are amongst the mineral products of the county. Amongst the products of the past year were 40,000,-

000 lb. beans, 230,000 cts. of wheat and 230,000 cts. of barley. The yield of beets was 160,968 tons.

YOLO COUNTY.

This, one of the rich counties of the Sacramento Valley, has an area of 1617 square miles. With the exception of the foothills of the Coast Range the county may be said to be level. It has 40,000 acres of tule lands. The soil is of the highest fertility, some of it being compared to that of the valley of the Nile. Wheat is the principal product but fruits and vegetables are important staples. There is a large amount of stock kept in the reclaimed tule lands. The dairy industry is flourishing.

YUBA COUNTY.

Yuba, one of the old mining counties, has an area of 625 square miles. Of its area, 200,000 acres are mountain land, the rest, fertile valley land. Large crops of hops, alfalfa and vegetables are grown, while a great deal of fruit is raised. The northeast of the county contains valuable timber. Stock raising pays. Amongst the industries are fruit canning, flour mills and the manufacture of woolen goods at Marysville.

MINERALS

Although it was known that California was rich in minerals of various kinds, it was not till the last decade of the nineteenth century that much attention had been given to the production of anything but gold and quicksilver. It is true that our oil, copper and lead resources had attracted more or less attention at different times, but the interest in them was only fleeting and soon ceased almost altogether, at least in the minds of the majority. Coal and salt received but little attention, and as for the rest they attracted attention mainly in the laboratory or the cabinet of the mineralogist. But a change has come over the mind of the capitalist and the prospector, and now the precious metal and quicksilver occupy much less of the attention of those engaged in the development of our mineral resources. Gold has taken a secondary position and quick-

silver is away down near the foot of the industrial ladder. But our mineral products have increased wonderfully during the past ten years. The following gives the output for the years appended:

1891.....	\$18,300,168
1892.....	18,300,168
1893.....	18,811,261
1894.....	20,203,294
1895.....	22,844,664
1896.....	24,291,398
1897.....	25,142,441
1898.....	27,289,079
1899	29,313,400
1900.....	32,622,945
1901.....	37,822,945

Shasta with its large copper yield stands at the head of the list, Los Angeles with its petroleum products second, followed closely by Kern with Nevada, San Bernardino and Tuolumne closely following. Owing to her large yield of petroleum Ventura has travelled rapidly to the front and now her annual product of minerals is valued at over a million dollars. Gold takes the lead in value, but is to-day less than one-half of the whole. Its future prospects are brighter. Petroleum comes next to gold and copper follows closely. Quicksilver has remained stationary or nearly so for the past three years, while borax the next in value is in much the same position. Coal is low down in the scale and instead of increasing in production has fallen off. The production of limestone and lime has fallen off chiefly because Washington has been a large shipper to this market for several years. Lead and lead ores which used to occupy quite a prominent place has also dropped out altogether and most of the shipments from the port to-day is the product of foreign countries refined here. California never was a silver producing country and the average yield of late years has not exceeded \$500,000 a year. California has large deposits of sulphur, but they have not been utilized of late years, owing to the cheapness of the imported article. It formerly produced pig tin, but its paying deposit was worked out. At one time Clipper Gap iron was quite a feature in our pig iron supply, but the cost of production and the competition of the Eastern Alabama and the foreign product has long since driven it from

the market. In 1893, however, 250 tons of iron ore and in 1894, 200 tons was produced, but since that time it has been absent as a factor in the industrial field. But the State has immense deposits of iron ore in Shasta and at the Minarets in the mountains near the headwaters of the San Joaquin River especially, and experts claim this to contain the largest percentage of magnetic iron found up to the present time in any of the iron deposits of the world. There are several articles that come under this head, which have been produced in larger or smaller quantity during the past ten years that are no longer handled. Such are in addition to those just noted, chrome, infusorial earth, onyx and travertine and soapstone. The highest production of chrome was 3,689 tons in 1894, infusorial earth 51 tons in the same year, onyx and travertine \$27,000 worth in 1893 and soapstone 400 tons in the same year.

Nitre too is attracting commercial attention. Taken as a whole, the value of our mineral products has just about doubled in ten years, but the future development will be much more rapid. This applies especially to petroleum, copper and gold, while the attention now being paid to California iron ores will doubtless result in a wonderful development. Instead, therefore of having to record an increase of one hundred per cent in the next ten years we will probably be called upon to note a production in the line of minerals of at least three fold that of the past year and that we will be able to place it at the round figure of a hundred millions of dollars.

GOLD

After the discovery of the new world, by Columbus, the search for the precious metals contributed more to its exploration and settlement perhaps than all other causes combined. Gold was first discovered in Cuba, then Mexico tempted the adventurers who soon afterwards found their way to Peru and looted the treasure of the Incas. The attention of the gold hunters was next turned north and after a time the shores of California which was supposed to be an island and to be fabulously rich in this metal were sought. More than one expedition came to naught and it was not till after the founding of the Missions and the establishment of small Spanish pueblos that any success waited on the exertions of the adventurous.

The first discovery so far as known was made near Los Angeles in 1842. But this did not prove very remunerative and the search was practically abandoned till Marshall's lucky discovery at Sutter's Mill, Jan. 19th 1848. Many suppose that the existence of rich deposits was known to the padres and that they purposely kept their knowledge back for fear it would result in the destruction of their Mission and the scattering of their Indian converts. But this is not certain.

Marshall's discovery resulted in the almost total abandonment of every business except that of gold mining and merchandising and a vast crowd of gold seekers sought the shores of California from every civilized land. They literally swarmed into the country by sea and by land for the next three years and the yield of gold increased in such a way as to astonish the world. There are and can be no correct figures of the yield of gold for those early days, nor indeed until the Mining Bureau commenced its labors. But the investigation of many statisticians, including those of Chas. G. Yale, have resulted in the compilation of figures covering each year since and including 1848. These, however, cannot be considered exhaustive and we have no doubt that 10 to 12 per cent. can be added to the total yield without any exaggeration being made. For the first five years they may be given as follows:

1848.....	\$ 245,301
1849	10,151,360
1850.....	41,273,106
1851.....	75,938,232
1852.....	81,294,700

This was the culminating period of gold production in this State. By 1852, the prospectors had swarmed over every part of the Sacramento and San Joaquin valleys, from the borders of Oregon to Tehachipi and had even spread beyond the borders of the State into Oregon and Nevada. While there was considerable fluctuation in the yield from this time on, it gradually decreased till 1873, when it was only \$15,019,210. Then began a recovery. Old methods and crude gave way to others more scientific and hydraulicing began to build up the yield again so that ten years afterwards, in 1883, the annual yield had reached \$24,316,873. The agitation against

hydraulic mining and its eventual outlawry at last practically cut off the source of supply and the yield again declined till in 1889 it reached the lowest point in fifty years—the return of that year being only \$11,212,913. Hence it began to pick up again, and next year, 1890, it was \$12,309,793. In 1896 it was \$17,181,562, the largest of last years—in 1898, it was \$15,906,478 and in 1900, \$15,863,355. Last year, 1901, it was approximately \$15,730,700. Hydraulicing will be resumed again under reasonable restrictions and the yield of gold will again approximate somewhat the figures of 1883. Quartz and drift mining and hydraulicing will again give us from \$20,000,000 to \$30,000,000 a year or even more while the prospector will here and there, in the hills and valleys, add to the treasure by his contribution, made after the fashions of the good old times.

Gold is still as it was in the olden days, for the most part a product of the interior valley counties and of the total yield of 1900, Nevada led with \$1,812,036, followed by Calaveras with \$1,649,126, Tuolumne with \$1,596,891, Amador with \$1,373,788 and Placer with \$986,155. Siskiyou with \$951,397 did not fall far short of a million. Kern, famous too for oil, yielded \$805,252, Shasta \$733,-467, Moro \$670,200, Sierra \$659,696, Trinity \$571,605 and Butte \$485,589, El Dorado yielded \$368,451, Plumas \$365,210, San Diego, \$335,937, San Bernardino \$247,949, Inyo \$213,655, Yuba \$208,-366, Sacramento \$176,007, Mariposa \$157,663, Riverside \$149,292, Humboldt \$109,444, Madera \$104,134. Of counties that yielded less than \$100,000, there were: Fresno \$22,346, Stanislaus \$21,212, Sisson \$19,801, Tulare \$10,445, Los Angeles \$5,508, Del Norte \$3,483, Ventura \$2,562 and Orange \$2,407. Gold to the value of \$972,185 was not distributed according to the location of its origin.

The yield of some of the leading gold mining counties since 1848, may be briefly given as follows: Nevada \$215,000,000, of which upwards of \$100,000,000 came from Grass Valley, Sierra \$190,000,-000, Butte \$200,000,000, Tuolumne over \$200,000,000, El Dorado \$100,000,000, Amador \$50,000,000 and Calaveras \$50,000,000. Of the total yield of the State a billion dollars was the product of auriferous gravels and the balance of quartz mines. The yield of same

particular mines has been erroneous. The group of mines known as those of the Forest Hill Divide in Placer have given to the world \$38,176,250 in gold. The Idaho, Nevada county, where drift mining began, produced \$12,000,000; Spring Valley, Cherokee Flats, Butte County \$13,000,000, and half a score of others all the way from \$500,000 to \$2,000,000 each and over.

The gold mining industry of California may be divided into placer, drift and quartz mining. At present the drift mines produce about \$2,000,000 a year, the quartz mines \$13,000,000, the rest being taken from the still worked placers. The drift mines which work the channels of ancient river beds, operate in what might be termed the placer fields of geologic time. These ancient contain it is estimated, billions of dollars worth of gold. But quartz mining is now and will be the principal factor in California gold mining. It is now carried on principally on the line of what is called the Mother Lode. This is the name given to a series of parallel veins that extend from Tuolumne to Butte, distance of 125 miles. It runs through Tuolumne, Calaveras, Amador and El Dorado counties. It has yielded about \$100,000,000 in gold and has deposits worth untold billions. It is about ten miles east of the lower foothills. About 10 miles further east is what is known as the east lode and along the crest of the Sierras is another belt about two hundred miles long and several miles wide. There are four mining belts altogether. The quartz mines have been worked to a depth of 2,500 feet altogether. The quartz mines have been worked to a depth of 6,000 feet. The cost of working has been brought to about \$5 per ton, though ore yielding \$2.50 per ton has paid,

From what we have here set forth, it may be seen that California's annual yield of gold depends mainly on the amount of capital invested in it and that there is practically no limit to the production. There is, however, another factor, which should be mentioned and that is a regular supply of water. At present that is irregular and the annual output is dependent mainly on the rainfall. Here, the necessity of impounding the flood waters that are allowed to run wastefully to the sea, is at once obvious and the future of California gold mining is too dependent largely on the successful efforts that

will be made in that direction. With what is here needed, accomplished, not only would gold mining once more come to the front as a leading industry of our State, but we would once more lead the world in the production of this, the most precious of the metals. The yield of gold in 1901 was smaller in the counties of Amador, Tuolumne and Calaveras and in the others with the exception of Shasta about the same as in 1900. Shasta shows an increase of about \$100,000 in gold over 1900, making its total for 1901, \$833,-467.

SILVER

California is not a silver land, although silver is amongst one of its minor productions. Some mines have been worked for the silver they contained, when that metal retained its coinage parity with gold, but now the silver produced is obtained from gold and copper ores, where in some cases it forms a considerable percentage of the values. In Shasta, for instance, where the value of gold, silver and copper in 1900 was \$5,535,842, silver was produced of the coinage value of \$635,640 or 11½ per cent of the whole. Shasta is the banner silver producing county of the State. The total yield of the State in 1900 was \$1,510,344. This was the largest since 1888, when the output was roughly estimated at \$1,700,000. The yield since 1887 has been as follows:

1887.....	\$1,632,003
1888.....	1,700,000
1889.....	754,793
1890.....	1,000,613
1891.....	953,157
1892.....	463,602
1893.....	537,157
1894.....	297,332
1895.....	599,789
1896.....	472,464
1897.....	452,769
1898.....	414,055
1899.....	504,012
1900.....	1,510,344
1901.....	1,453,832

The first discovery of the white metal in the State was made in the sixties and but little attention was paid it, although attempts were

made at several places to work ores for the silver contained therein. Argentiferous Galena ores of silver and lead were worked when the price of silver justified it. They exist principally in Inyo, San Bernardino, Orange and Siskiyou Counties. As already noted, Shasta is the principal silver producer. In 1900, San Bernardino produced \$172,759 in coinage value of the white metal, Kern \$147,-736, Inyo \$113,493, Calaveras \$80,762, Mono \$75,921, Nevada \$66,841 and Tuolumne \$62,367. The yield of El Dorado was \$25,-129, of San Diego \$19,810, of Trinity \$16,567, of Amador \$14,915, of Siskiyou \$13,986, of Napa \$13,853, of Butte \$13,032 and of Placer \$12,058. The yield from other counties was very small—Riverside \$6,848, Yuba \$4,265, Plumas \$4,159, Madera \$3,883, Kern \$3,463, Sacramento \$986, Lassen \$676, Fresno \$479, Tulare \$433, Humboldt \$283. The production of silver will increase with that of copper, lead and gold as the ores containing these contain much silver, also more especially copper ores. The decrease in silver for 1901 must be distributed pretty generally over all the producing counties except Shasta, which shows an increase of \$200,000, making its total \$835,640.

COPPER

The Pacific Coast of the United States has probably the most extensive and valuable copper deposits in the world. They have been traced at or near the coast and at a distance of about 250 miles from it all the way from the Arctic Ocean to the borders of Mexico, indeed extending as far south as Cape Horn. Here the ore in many cases assays sufficient gold and silver to pay the expense of working, so that no matter what the price of copper may be the industry pays a profit to those engaged in it. This will eventually cause the State to be the leading one in the copper industry in this country. Copper mining is not a new industry in California, dating away back to the 50's. The name of Copperopolis as the trade center of the district indicates sufficiently what its importance was then. But the reduction of the price from 17c to 10c and even less was fatal and California as a producer of this metal had about faded out of sight. The advance to 20c again gave new life to the industry in this State and started prospectors to work everywhere with the result that it is now as a

metallic product second in California only to gold. There have been many fluctuations in the figures of the quantity produced. The following give almost exact date since 1887:

	lbs.
1887.....	1,600,000
1888.....	1,570,021
1889.....	151,505
1890.....	23,347
1891.....	3,397,455
1892.....	2,960,944
1893.....	239,682
1894.....	738,594
1895.....	225,650
1896.....	1,992,844
1897.....	1,363,636
1898.....	2,154,229
1899.....	23,915,486
1900....	29,515,512
1901.....	42,015,125

The production almost ceased altogether in 1890, and though there were a few years when it went above a million pounds it was not till 1899 that it assumed any importance. The neighborhood of Copperopolis and Campo Seco in Calaveras County, and of Spencerville in Nevada County were the olden seats of the copper mining industry. In 1867 and 1868 there was mined at these places, 60,000 tons of ore, while there were small shipments from Del Norte. Outside of the copper prospects discovered in the coast counties, which are scattered at intervals over 750 miles, there are two principal belts, one 25 miles long in Shasta, the other 140 miles in length in the lower foothills of the western slope of the Sierra Nevada. Good prospects have also been found in Plumas, Sierra, Trinity and San Bernardino Counties, some of which are being worked. The ore belts yield sulphuride ores carrying not only copper, but gold, silver and iron. The property at Iron Mountains offered at a low price in 1896 without purchasers was bought by an English corporation, the Mountain Copper Company Limited, which has invested millions in the enterprise and has 12 furnaces in operation. This company produces nearly all the copper credited to Shasta—22,886,000 lbs. in 1900; on this the net profits were \$1,659,455, out of which a

dividend of 16 per cent was declared and \$500,000 added to the reserve fund. The percentage of copper was 5.77. The company have expended several hundred thousand dollars in preparing to reduce the copper matter that used to be shipped outside of the State for this purpose. Besides the property of this company in Shasta, there is that of Capt. De La Mar, who has expended vast sums here and the claims known as the Stowell, the Balakala and the Mammoth.

Out of the product of 1900, Shasta led with 25,736,473 lbs., six-sevenths of the whole San Bernardino at the other extremity of the State produced 1,920,000 lbs., Kern in the San Joaquin Valley 4,000 lbs. and Madera 500,000 lbs.; all the rest was produced in the northern mountain counties, neighbors of Shasta—Calaveras 980,934 lbs., Amador 220,000 lbs., Nevada 150,980 lbs. and El Dorado 3,125 lbs. The total value of the output was \$5,774,000. The eminence of Shasta in the matter of production depends much on private enterprise and when the same enterprise shall have been displayed elsewhere, results will be similar. Still it is reasonable to suppose that Shasta will retain her lead. There were 201,571 tons of ore produced at Keswick in 1900. Shasta's development has been the work of three short years. The increase of production in 1900 was roughly speaking 25 per cent, and this continued, for another decade would make the output in 1901, 278,400,000 lbs. nearly, or a product worth about \$45,000,000 yearly or far exceeding in value the whole mineral output of the State to-day. There has been a great increase in Shasta County's production in 1901. That increase has been in round numbers 12,500,000 lbs., making a total of 38,236,473, worth \$4,588,376. The total yield of copper for the year was 42,015,512 lbs. The yield of the other counties was about the same as in 1900. Fresno commenced production in 1901 and on May 1st the first bar of Bessemerized copper ore made on the Coast was produced at the Copper King Smelting Works, which now works 100 tons of copper ore per day. During the past fifteen years several important copper veins were discovered in what is now known as Madera County, which in all probabilities will be worked in conjunction with the iron ores of that county. These veins run side by side. The ores generally average about 12

per cent copper, but there is one vein in the group 100 feet in width, which bids fair to yield 30 per cent or over.

QUICKSILVER.

Spain, California, Peru and Hungary are about the only producers of this subtle metal in the whole world as far as is known, for though traces have been found elsewhere, in Oregon, Texas and Mexico, notably, they have not been such as to encourage the investment of capital. And in Spain and Hungary, which are large producers, the existence of the metal in paying quantities seems to be confined to a couple of mines, one of which has been worked from pre-historic times. But the live metal is found over a great extent of California, principally at or near the coast range. Here cinnabar ore is found in thousands of places, though not in paying quantity save in a few. But good prospects are being constantly discovered and out of them all, no doubt other good mines will be developed. The business has been followed in this State since 1850 and during that time forty producing mines have been worked, while thirty have been in operation at one and the same time. Quicksilver, while the price held up was a source of great wealth to the State and to individuals, and large profits have been made out of it. It has given some of our millionaires to California. The export had reached 44,506 flasks in 1868, and the price was brought as high as \$1.70 per lb. Nov. 1873. It has fluctuated between $33\frac{1}{2}$ c and \$1.55 per lb. The heavy production of the sixties came to a stop, and in 1873 the total yield of the mines was only 28,600 flasks; this was on account of the falling off in the production of the new Almaden which at one time turned out 3,500 flasks a month, or 42,000 flasks a year. Towards the close of 1873 this was reduced to 750 flasks a month. At that time the price in London was £20 or in round numbers \$100 per flask—at par \$97.33. Between 1850 and 1866, this State supplied one-half the production of the world. For a long series of years, the New Almaden, the New Idria and the Redington mines yielded the greater part of the supply of the State. But the rate at which the mines were worked at length exhausted the supply and now Napa takes precedence of Santa Clara as a quicksilver producer. The New Almaden has been one of the greatest quicksilver

mines in the world and has over 76 miles of underground workings. Our product finds a market everywhere; as New York, where most of the product is shipped, supplies many markets. Mexico is our largest foreign customer and has long been a good one. We used to ship largely to China, but the European supply manipulated by the Rothschilds has taken the place of ours in that country. The production declined for a number of years. In 1890 it was 22,926 flasks and next year 22,904 flasks; the lowest that it has been in over 30 years. It then began to increase, till in 1895, it was 36,-104 flasks. Since then the yield has been as follows:

	Flasks
1896.....	30,765
1897.....	26,648
1898.....	31,092
1899.....	29,454
1900.....	26,317
1901.....	26,633

The county of Napa led no production in 1900, the yield being 8,724 flasks; Santa Clara came next with 5,145 flasks, followed by San Benito with 3,990 flasks and Lake with 3,165 flasks. From Trinity came 2,294 flasks and from Sonoma 2209 flasks. San Luis Obispo yielded 515 flasks and Colusa 275 flasks. Most of it comes therefore from the north of the bay and the country within a hundred miles of it. The price of quicksilver in this market has been steady for a long time—\$47.50 for local trade and \$45 for export. Most of the producers agree in fixing the price at stated periods.

Besides the mines now worked hundreds of prospects have been made all over the State and there is no doubt that in this one article California leads the world. The yield of 1901 may be estimated as follows:

Napa.....	8,724
Santa Clara.....	5,800
San Benito.	5,000
Lake.....	4,000
Sonoma.....	2,209
San Luis Obispo..	400
Trinity....	400
Colusa.....	100

BORAX.

The deposits of what may be termed crude borax in California and Nevada are without doubt the most extensive in the world. From there the markets of the United States are supplied and some export trade with other countries carried. We used to export largely to England from San Francisco, but this has altogether ceased. Borax first commenced to assume importance in the seventies, and in 1874 was quotable at $7\frac{1}{2}$ cents per pound for concentrated and 12 cents per pound for refined. The price for the former is now $6\frac{5}{8}$ cents and of the latter 7 cents. Millions of dollars have been sunk in the development of the deposits in California, and at least one millionaire owes his fortune to it. It used to be all refined in this State, but is now practically all shipped to New York by rail in an unrefined state. Shipment by water to New York has ceased.

The supplies in the State are most of them obtained in Inyo and San Bernardino counties, as beds in dry marshes and as Cole manite, so-called after Wm. T. Coleman, who did so much to develop the business, on the coast. The Inyo deposits are found in Death Valley, which is 300 feet below the sea level, and the hottest place in North America. Four principal companies work most of the deposits but there are some smaller ones. The production has varied largely. In 1873 the shipments by sea and rail indicated a production of about 6,000,000 pounds. By 1898 this had fallen off to 2,029,390 pounds. But now an increase began again followed again by a falling off. In 1890, however, the output suddenly went up to 6,402,034 pounds, and from this time on more rapidly. In 1898 it was 16,600,000 pounds, in 1899, 40,714,000 pounds and in 1900, 51,674,000 pounds. Last year it was probably 108,000,000 lbs. In 1900 Inyo produced 115 tons of refined and San Bernardino 1,487 tons of refined and 24,235 tons of crude. The greater part of the borax consumed in the world is produced in California. There has been quite an increase in the quantity of borax produced during the year. In Inyo, the quantity has been 1300 tons of boracic acid and in San Bernardino 12,700 tons of boracic acid. There was mined 36,500 tons of crude. The increase is not as great over 1900 as it

would appear to be for the reason that the statistics obtained this year by the officials of the Mining Bureau are more complete than they were in other years. The work of development is going on at ten places, Tehama, Lake and Ventura Counties as well.

CARBONATE OF SODA.

In 1902 the production at Keeler, Inyo County, was 20,000 tons. Besides this it is found in Mono and San Bernardino Counties.

NITRATE OF SODA.

We have hitherto been dependent on Chili for this mineral, but development work has been going on for some time. It was first found in marketable quantities a year and a half ago. It is found in San Bernardino, San Diego and Inyo.

SALT.

The production of salt is increasing largely. In 1900 Alameda county reported 64,718 tons; Colusa 20 tons; Riverside 4,000 tons; San Diego 600 tons, while 20,000 tons were unapportioned—making a total of 89,338 tons valued at \$204,754. The amount produced in 1901 can be as yet only approximated, but it was probably 100,000 tons, of which 30,662 tons must be credited to Salton, Riverside County. Besides the counties here noted as producers, we can add Humboldt, Shasta, Calaveras, San Luis Obispo, San Diego, Los Angeles and San Bernardino Counties at eighteen different locations.

PETROLEUM.

The first discoveries of petroleum in California were made in 1864, soon after the great boom in Pennsylvania. There was considerable excitement for a time, and many millions were spent in sinking wells in different parts of the State, but the drop in the price of crude petroleum suddenly brought the business in nearly every portion of the State to a full stop. The discovery of oil in Sespe canyon in 1873 started up the excitement again. A refinery was started in Alameda and for several years the California pro-

CRYSTAL SALT WORKS, ALAMEDA COUNTY



duct was sold in the market of San Francisco alongside of the Eastern. But the business did not pay, and the use of our earth oil, as it was known, was confined almost altogether to lubricating purposes. But while the production ceased in almost all the rest of the State it was continued in Los Angeles county and spread from there into Ventura. There were 175,000 barrels produced prior to 1876. In that year the quantity had reached a minimum, being only 12,000 barrels. It then began to increase and made comparatively rapid strides in 1879, 1880 and 1881, reaching 99,-562 barrels in the latter year. In 1887 the product was nearly twice that of the previous year, and in 1888 it had gone up to 990,333, or almost a million barrels. This, however, was the maximum for seven years to come. In 1889 it went down to 303,220 barrels. But the sinking of wells in Los Angeles City field in 1893 changed the situation and the tide again began to turn. During two years the output increased rapidly and in 1895 it was 1,245,-339 barrels. By 1899 it had more than doubled, being 2,667,875 barrels. The yield of Los Angeles had been over a million barrels a year. In 1898 Coalinga, in Fresno county, was discovered, and in 1899 Kern River with its oleaginous wealth burst upon the attention of the world. From that time on the prospector and the driller have been at work in every likely spot all over the State, and each month has seen an increase in production over the month preceding. The yield of oil in 1900 was 4,329,950 barrels, while the product for 1901 was more than double or 8,742,500 barrels. During the past year the principal fields developed were those of Sunset, McKittrick and Midway, while in other directions, notably in Fresno—San Benito district—good prospects have been struck. The yield in 1900 was as follows, in barrels of 42 gallons each:

Fresno.....	547,960
Kern.....	919,275
Los Angeles.....	1,722,887
Orange.....	254,397
Santa Barbara.....	183,486
Ventura.....	443,000
Unspecified.....	248,945

Here Kern River jumped in one year from 15,000 barrels to almost a million. Los Angeles increased by 313,531 barrels or

over 22 per cent, while Orange more than doubled its output. The great increase in 1900 was this from Kern River, while in 1901 there has been an increase in all quarters. There is hardly a county in the State that has not been prospected. The production of 1901 may be divided out as follows: Fresno 740,000, Kern 4,492,500, Los Angeles 2,008,500, Orange 724,000, Santa Barbara 135,500 and Ventura 512,000 barrels. It will be noted that the producing districts all seem to be in that part of the State, south of a line drawn through the lower part of Santa Clara Valley, and there undoubtedly the oil is nearer the surface than it is in the north. But the oil of Northern California has to be sought for at a greater depth, where from 600 to 1600 feet represents the depth of the wells in the great producing districts. The depth in the north will have to be from 1600 to 2500 feet. The oil here is often of a lighter quality, suitable for the highest grades of lubricating oil and capable also of being used as an illuminant. In this respect it compares favorably with the product of Pennsylvania. In the southern fields, however, good lubricating and illuminating oil is found, but the greater part of it is and will be used as fuel. We have referred to the lesser depths at which oil is struck in the southern fields; we may also remark that the greater depth the wells are sunk, the greater the flow of oil. This has been proved especially in Los Angeles.

The great obstacle in the way of the development of oil resources has been the one of transportation. In some instances there is no railway to haul it, and where there is the charge of 42 cents per barrel is almost prohibitory. But pipe lines will settle this difficulty. There are now many pipe lines either in operation or proposed, such as those in Ventura and Kern. In the former county they bring the oil to tide water where it is loaded on the steamers "George Loomis" and "Ventura," and brought to San Francisco Bay. Both together have a carrying capacity of 13,900 barrels, and they can transport a million barrels a year to the city. Pipe lines from the lower part of the San Joaquin Valley to Firebaugh Ferry on the San Joaquin River and to San Francisco Bay are planned. They will be fed from lateral branches and the transpor-

tation difficulty will have been solved. Each pipe line will, it is estimated, cost three millions of dollars.

There have been various estimates of the amount of Eastern capital invested in the oil fields of California, and though it cannot be accurately stated, it cannot be estimated at anything less than thirty millions of dollars. The number of companies is about 4,000, of which but a fraction are engaged in producing oil or in drilling for it. The cost of drilling wells in Southern California has been from \$6,000 to \$10,000 each. The yield has varied all the way from one barrel to 1,000 barrels a day. Want of storage facilities has been a great drawback to the oil industry, but these are being rapidly supplied and soon, except in new districts, there will be nothing to complain of on that score. The depth of the oil sands in the Kern River has been averaged at 400 feet, but they extend to 600 feet in some instances. It has been estimated that there are a billion barrels of oil in the oil sands of the Kern field, and as this when marketed is worth a billion of dollars, and as Kern is only a part of the California oil fields, this shows that oil as a product is of at least an equal value with gold. The price of oil at the well has varied according to the quality of the product and the necessity of the seller. It has gone as low as 10 cents a barrel and as high as \$1, but about 70 cents would seem to be a good average for the southern part of the State. Of course where there is a market at the place of production it has sold at \$1.00 and \$1.25 and sometimes higher. But the price had been gradually declining until about the middle of 1901. It will no doubt be still further strengthened. It is estimated that California has 40,000 square miles of territory, containing strata that indicates the presence of oil in larger or smaller quantity. But a portion of this has yet been tested. There is no doubt that the area of the State in which oil is found in paying quantity will be largely increased. The use of oil as a fuel has greatly increased and would be much larger to-day, but for the great strike in the iron trade. At present it fully equals the production of the State and it is estimated that when it will have been used where it can with advantage, it will take 10,000,000 barrels to meet the demand by the railroads, steam-

ships, etc. and in manufacturing. For these purposes it is cheaper than coal on the Pacific Coast by about 50 per cent.

About 1,800,000 bbls. of oil have been refined and as facilities for refining are afforded, the quantity thus used will become large. Of course this is rumored from the field of competition as fuel. Refining adds largely to the value of the crude material, the results being that a barrel of oil worth \$1 becomes worth \$2 to \$3 or more. The finer oils when refined become with by-products worth \$5 to \$8 and even more per barrel, so that the production and refining of oil is sure to take a very high rank amongst our industries.

The yield of oil in this State may be given as follows:

	Bbls.
Previous to 1876.....	175,000
1876.....	12,000
1877.....	13,000
1878	15,227
1879.....	19,858
1880.....	40,552
1881.....	99,562
1882.....	128,636
1883.....	142,857
1884.....	262,000
1885.....	325,000
1886.....	377,145
1887.....	678,572
1888.....	990,333
1889.....	303,220
1890.....	307,260
1891.....	323,600
1892.....	385,049
1893.....	470,179
1894.....	783,078
1895.....	1,245,339
1896.....	1,257,780
1897.....	1,911,569
1898.....	2,249,088
1899.....	2,677,875
1900.....	4,329,952
1901.....	8,742,500

MINERAL WATER.

The existence of Mineral Springs possessing healing properties was known almost as soon as white men made their appearance in the State. The production and consumption of these water has been carried on for over a quarter of a century. The production by gallons since 1887 has been as follows:

1887.....	618,162
1888.....	1,112,202
1889.....	808,625
1890	258,722
1891.....	334,553
1892.....	331,575
1893.....	383,179
1894.....	402,275
1895.....	701,397
1896	808,843
1897.....	1,508,192
1898.....	1,429,809
1899.....	1,338,537
1900.....	2,456,115

The production by counties in 1900 was as follows: Butte, 15,000 gallons; Colusa, 53,500 gallons; Contra Costa, 12,000 gallons; Fresno, 5000 gallons; Humboldt, 6000 gallons; Lake, 758,000 gallons; Mendocino, 24,875 gallons; Monterey, 20,000 gallons; Napa, 171,000 gallons; San Benito, 10,000 gallons; San Diego, 6500 gallons; Santa Barbara, 19,000 gallons; Santa Clara, 30,000 gallons; Shasta, 9,640 gallons; Siskiyou, 700,000 gallons; Solano, 20,000 gallons; Sonoma, 575,000 gallons; unapportioned, 20,000 gallons.

OTHER MINERALS.

The amount of sandstone prepared in 1900 was 378,463 cubic feet, of which 7,500 feet was from Los Angeles, 120,000 feet from Santa Clara, 908 feet from Yolo and 12,500 feet unapportioned.

The amount of granite cut in 1900 was 316,803 cubic feet, of which 124,015 feet was from Madera, 26,922 feet from Placer, 103,520 feet from Sacramento, 6,000 feet from San Bernardino, 7,300 feet from San Diego, 2,030 feet from Santa Barbara, 5,750 feet from Trinity, 1500 feet from Tulare, 28,629 feet from Ventura and 4,000 feet unapportioned.

FRUIT.

The fruit industry of California will always rank as a leading one in the State, on account of the vast extent of land suitable for its cultivation and the rich returns that it yields to the cultivator. We owe the introduction of all the leading varieties, now cultivated, to the Mission fathers, who first planted them about one hundred and thirty year ago. They were of course introduced from Old Spain, through Mexico, but of late years all the finest varieties have been planted and the matter of fruit production is being largely conducted from a scientific standpoint. Before many years will have passed by none but the very best varieties will be grown, and then only where the soil and climate are especially suited to them. This is fast being determined by experience, intelligently directed. Notwithstanding its early introduction, there was very little done in the cultivation of fruit till the early seventies, and then it was several years before the industry assumed any prominence. In fact a period of twenty years will cover its practical existence as a factor of our agriculture.

In 1767 the first fruit trees were planted and in 1793 the different Missions had about 5000 trees, all seedling. In 1812 and again in 1820 several small orchards were planted in Sonoma county, while in Yolo and Los Angeles some were planted in 1841 and 1845. Some of those are still in existence. Now every year new trees are coming into bearing and we estimate that the fruit output of the State will be more than doubled in the next 20 years. The apple grows well in the foothills of the Sierras and the Coast Range, the peach and the nectarine in our warm valleys, the pear almost everywhere, the apricot around San Francisco Bay and where the salt air and sufficient warmth are found, the quince almost everywhere and the cherry in the neighborhood of San Francisco and in other localities, where soil and surroundings are similiar. The prune and the plum flourish, the former particularly around San Francisco Bay and in the interior valleys, while the South is the home of the citrus fruit. The olive and the fig they grow everywhere in the warm valleys. Berries are raised in all parts of the State. The almond and the walnut flourish in congenial situations. The grape,

especially the Mission, is grown everywhere. For some description of fruit especially the peach, the apricot and the pear, California is unrivalled.

The number of acres devoted to fruit culture in 1892 was 401,415, of which at that time 282,496½ acres were in bearing. Today all are in bearing and produce fruit worth \$40,000,000, or an average of about \$100 an acre, but much of this land will net more than an average of production or from \$100 to several hundred dollars per acre. It is estimated that there are not less than 30,000,000 acres in California eminently suited to fruit growing. At \$100 per acre the product of this would be worth three billion dollars per annum. Our estimate is that in 20 years California fruit product will average one hundred million dollars a year. Fresno with Riverside and San Bernardino vie with each other as to the average of fruit, about 50,000 acres for the first and the same amount for the latter together. Los Angeles comes next with say 35,000 acres. Santa Clara has 25,000 acres devoted to fruit culture. Tulare has 21,000 acres nearly, Solano, 19,000 acres; San Diego, 16,000 acres; Alameda, 16,500 acres; Orange, 15,000 acres; Sacramento, 13,000 acres; Sonoma, 13,000 acres; Butte, 13,000 acres; Yolo, 12,000 acres; Ventura, 11,500 acres; Placer, 9000; Kern, 10,000 acres; Santa Barbara, 10,000 acres; Santa Cruz and Tehama, 7500 acres each, San Joaquin, 6000 acres; San Luis Obispo, 5000 acres; Contra Costa, 6000 acres; Napa and Alameda. 3500 acres each; Merced, Sutter and Monterey, 3000 acres each; El Dorado and Glenn, 2500 acres each; Yuba and Shasta, 2000 acres each. Siskiyou has 1600 acres, San Benito, 1800 acres; Lake, 1750 acres; Nevada, 1700 acres; Mendocino, 1500 acres; Humboldt and Calaveras, 1400 acres each; Stanislaus, 1300 acres; Amador, 1100 acres. The rest are all small, Marin, 800 acres; Mariposa and Lassen, 600 acres each; Tuolumne, 700 acres; Modoc and Trinity, 300 acres each; Del Norte, 150 acres; Sierra, 108 acres; Alpine, 30 acres and Mono 11 acres.

The total acreage has increased largely since 1892, and now may be given at 565,402, of which the above represents the bearing acreage. The acreage according to variety is as follows: Plum and prune 146,466, peach 100,030, orange 65,168, olive 56,310,

apricots 49,826, apples 28,564, pears 27,535, lemon 16,408, cherry 10,410, fig 6625, pomelo 636, nectarines 300, quince 65, miscellaneous 3206. Nuts: Almonds 29,079, walnuts 24,804. The area contains about 35,000,000 trees, which in full bearing would average 100 lbs to a tree, or 3,500,000,000 lbs per annum for the State. At \$40 per ton this would give \$70,000,000 as the annual value of our fruit crop. This shows what is possible even with our present acreage. The actual production of the State including wine grapes may be given at 2,500,000,000 lbs. This would give 1,350,000 lbs of deciduous fruits exclusive of grapes and about 500,000,000 lbs of citrus fruits etc.

Of the actual production, about 250,000,000 lbs. of green fruit is consumed in the State and on the Coast; this accounts for the whole crop. In 1901 there was a large falling off in the production of apricots, early peaches and cherries, while the crop of raisin grapes also was somewhat less than in 1900. The shipments of deciduous fruits for the past twelve years may be given as follows:

	tons
1890	34,042
1891.....	50,548.9
1892.....	59,374.5
1893.....	80,112.3
1894.....	90,692.2
1895.....	66,264.8
1896.....	57,638.3
1897.....	72,350.2
1898.....	69,732.2
1899	96,943.6
1900.....	91,176.5
1901.....	80,000

Of the Pajaro Valley apple crop 2500 cars have been shipped to England and the East. The portion not shipped, is dried, canned or consumed in the State and shipped to neighboring States. The tendency on the Coast is to use more fruit every year, leaving proportionately less to export.

The arts of the canner and the fruit drier enable the surplus to reach the consumer in the State and abroad in quite as good condition, as far as utility as a food product is concerned, as when they were taken from the tree. The extent of the market for California

fruits depends on the care taken by the orchardist and the packer as to soil and climate for the different varieties and as to the perfection in the arts of canning and drying. With proper attention to these matters the field is practically illimitable. The dearness of meat will make it to become less and less an article of popular consumption and it will be replaced to a great extent by fruit. Let each family in the United States, say 15,000,000 of them, use on an average 3 lbs. of fruit each day and there will be a total annual consumption of 16,425,000,000 lbs. worth \$40 per ton, \$328,500,000 of which California can furnish its share, and it is not only the United States that we can look to for a customer, but practically all the civilized world. As it is to-day, the fame of California fruit has gone to all lands. One of the largest consumers of our fruit is Great Britain, which buys canned and dried. British Columbia and Australia are also large purchasers and will be larger. They take canned and dried fruit, principally the latter and raisins. The shipments by the steamers to Australia, New Zealand and British Columbian ports and for the Klondike and Alaska during 1901 were very large. The markets of Mexico and the republics of Central and South America are beginning to take a good deal of our product, especially those of Mexico and Central America, and as we have steam communication regularly we will find a good demand in those of South America also.

In the early seventies, the possibilities of California raisins had begun to be talked about. Samples were exhibited at State Fairs and elsewhere but no one dreamed that they could compete with those of Malaga. A few hundred boxes were made. In 1873 the product reached 6,000 boxes, in 1874, 9,000 boxes, in 1875 11,000 boxes. Next year it nearly doubled—19,000 boxes, but the United States imported 1,350,000 boxes from Spain. Then the make grew rapidly to 32,000 boxes, next year ; 48,000 boxes in 1878 ; 65,000 boxes in 1879 ; 75,000 boxes in 1880 and 90,000 boxes in 1881. Since then the crop has been as follows :

20 lb. bx.	20 lb. bx.
1882.....	115,000
1883.....	140,000
1884.....	175,000
1885.....	470,000
1886.....	703,000
1887.....	800,000
1888.....	950,000
1889.....	1,250,000
1890.....	1,900,000
1891.....	2,600,000
1892.....	2,850,000
1893.....	4,250,000
1894.....	5,150,000
1895.....	4,568,000
1896.....	3,412,530
1897.....	4,685,200
1898	4,031,650
1899.....	3,578,400
1900.....	3,604,000
1901.....	3,600,000

There is nothing to prevent the increase of the crop but the dry weather or some mishap to the crop of raisin grapes as the market is constantly increasing. We export largely to British Columbia and the Australias. The Pacific market is capable of indefinite expansion. The area devoted to the raisin grape at present is in round numbers, 50,000 acres, principally in the county of Fresno. About 47,000 acres are yielding and the average product in a good year is one ton per acre or 47,000 tons to the State. Fresno county produces 35,000 tons from 35,000 acres. But this varies with the year. The crop of 1900 was about 36,000 tons for the whole State, of which Fresno produced about 33,000 tons and Southern California—Los Angeles, San Bernardino and San Diego, the rest. The following table of shipments by rail for 1900 indicates with tolerable clearness the county of production; the quantity credited to San Francisco and Oakland really belonging to Fresno:

	tons
San Francisco.....	74.8
San Jose.....	5.9
Stockton (Fresno).....	29,888.7
Sacramento	878.9
Marysville.....	326.3

other points in

North Calif.....	3,042.9
Los Angeles.....	885.4
Orange.....	69.3
Riverside.....	39.1
San Bernardino.	273.8
San Diego.....	343.6

Shipments by rail and sea, exclusive of those to Coast points by

sea, have been as follows: 1890, 20,560 tons; 1891, 22,779.1 tons; 1892, 26,673.4 tons; 1893, 37,409.9 tons; 1894, 46,954.4 tons; 1895, 46,390.1 tons; 1896, 34,434.6 tons; 1897, 39,065.8 tons; 1898, 47,796.3 tons; 1899, 36,008.7 tons; 1900, 36,047 tons; 1901, 35,000 tons (est.) The maximum of shipments was reached in 1898. The quantity shipped more than doubled in eight years. The decline during the past three years has been due to unfavorable seasons. Seeing the care taken in the cultivation and packing, California raisins may well be declared to be the very best in the world.

THE FIG.

The fig is one of the oldest cultivated fruits of which we have any record. It grows everywhere in the State but flourishes especially in the warmer sections. The number of acres under cultivation is given elsewhere. Some of the finest varieties extant have been introduced during the past dozen or so years, while the methods of preparing for market have been very much improved. The first carload of dried California figs was sold in New York in 1889, two months before any of that season's imported had reached there. It had long been desired to grow the Smyrna fig of commerce in the State but all efforts were unsuccessful until the introduction of the fig wasp. This was accomplished by Geo. C. Roeding and now California produces better figs than any other country. The new fig is known as Calmyrna and it contains according to the testimony of Professor Hilgard of the University of California, 63.92 per cent of sugar, or 1.42 per cent more than the celebrated Smyrna fig of Asia Minor. The output of figs in the State is 6,000,000 lbs. yearly, most of which find a ready market in the East. The crop for several years has been as follows: 1891, 360,000 lbs.; 1892, 500,000 lbs.; 1893, 900,000 lbs.; 1894, 1,540,000 lbs.; 1895, 2,750,000 lbs.; 1896, 2,160,000 lbs.; 1897, 3,250,000 lbs.; 1898, 4,780,000 lbs., 1899, 5,800,000 lbs.; 1900, 6,000,000 lbs.; 1901, 5,900,000 lbs.

DRIED FRUIT.

We refer here more particularly to all varieties of dried fruit except raisins and prunes. For years after fruit-growing became one of our leading industries, the problem was what to do with the surplus. The canner took charge of a portion, but the canning industry had not then grown to the proportions that it has since assumed. The only way to solve it was to resort to drying, but several years elapsed before any headway was made in this direction. In 1873, there were 736,000 lbs. dried. Almost all varieties of fruit are dried; the principal, however, outside of the prune are the apricot and the peach, the former especially. California bears the palm for apricots, the greater part of the crop of which is dried. Exclusive of prunes the quantity of dried fruit may be given as follows: Peaches 27,150,000 lbs.; apricots 30,125,000 lbs.; apples 5,250,000 lbs.; pears 6,350,000 lbs.; plums 3,250,000 lbs.; nectarines 285,000 lbs.; grapes 3,450,000 lbs. Taking in prunes, the total amount of dried fruit for the year 1900 was 250,000,000 lbs.; for 1901, it was only 126,000,000 lbs., of this about 90,000,000 lbs. must be credited to Santa Clara County, while in 1900, the amount raised in the same county was about 130,000,000 lbs.

The shipments by rail of dried fruits in 1890 were as follows San Francisco 5,548 tons; Oakland 530 tons; San Jose 32,270.4, Stockton 23,599.4 tons, Sacramento 13,157.8 tons, Marysville 5,612.9 tons, other points north of California 4,181.4 tons; Los Angeles 1,748.5 tons, Orange 492.27 tons; Riverside 130.1; San Bernardino 1,265.5 tons; San Diego 59.6 tons. The growth of the trade in dried fruits is shown by the shipments. In 1880, shipments were 500,000 lbs. and in 1889, over 33,000,000 lbs. or 16,500 tons. This was a phenomenal growth. In 1890, this had doubled, being 32,297.5 tons. In 1891, it was 32,919.1 ton; in 1892 29,762.2 tons and in 1893, 45,386.2 tons or 50 per cent of an increase. The figures of 1894 were 51,828.2 tons and of 1895, 61,386.4 tons, a steady increase. In 1896, there was a falling off to 48,522.8 tons but this was made up for in 1897, when it went up to 75,159.7 tons. In 1898 a slight increase was shown, the total being 76,662.7 tons, while in 1899 the total went up to 86,925.3 tons

and in 1900 to 90,052.8 tons, an increase of nearly three fold in ten years. In 1901 the shipments were over 100,000 tons and while there may not be such an increase between 1900 and 1910 as there was between 1890 and 1900, we believe that it will be very large indeed. The output has been as follows :

lbs.	lbs.	lbs.
1891....40,210,000	1895....57,960,000	1898....37,400,000
1892....38,200,000	1896....42,775,000	1899....68,540,000
1893....40,840,000	1897....79,110,000	1900....94,580,000
1894....81,720,000		1901....84,000,000

THE PRUNE CROP.

The California prune takes a leading rank amongst the prunes of commerce. It has less pit and skin in proportion to the meat than the French fruit. Its proportion of saccharine matter is much greater than that of any other prune. When cooked it has a delicious flavor. It keeps better and longer without sugaring than the foreign article. The price of the green fruit varies from \$35 to \$60 per ton, that of the dried fruit, \$30 to \$50, although it has been sold lower. If properly cultivated, some fruit may be gathered the third year, the fifth will give 50 to 60 lbs. to the tree and the sixth should double that. It is then in its full bearing and should give 150 to 300 lbs. of green fruit every year. In 1873 there were 5,368 lbs. of plums and prunes dried. Statistics of the annual production have been kept since 1880, when the crop was estimated at 2,000,000 lbs. In 1888 it rose suddenly to 15,200,000 lbs. and in 1891 to 27,000,000 lbs. From that it increased to 97,780,000 lbs. in 1897. That of 1898 was 90,470,000 lbs., of 1899, 114,227,000 lbs. The crop of 1900 was unusually large—190,431,019 lbs., of which about 120,000,000 lbs. were the product of Santa Clara County. That of 1901 was 100,000,000 lbs.

CANNED FRUIT.

Once that the output of fruit became larger than the population needed during the season of ripening the aid of the canner was sought to preserve it so that it could not only be kept for the rest of the year, but that the surplus should find a sale in the markets of the East and of the countries on the Pacific Ocean. The first

cannery was established in this city in the 60's. But it was only in the seventies that the work of the canner assumed any magnitude. The growth of the business during the past ten years or so has been very rapid. We began in 1890 with almost a million and a half cases, or to be exact, 1,493,300 cs. each 24 $2\frac{1}{2}$ lb. tins. In 1894 the pack was 1,528,818; in 1897, 1,942,982; in 1898, 3,000,000; in 1900 2,600,000 and in 1901, 2,250,000 cs. The greater part of the pack is disposed of in the East while England has taken 700,000 to 900,000 cs. annually and large quantities are sent to Australia, British Columbia, China, Japan, the East Indies and indeed all over the world. We now ship a good deal to South Africa and even some to Teheran and Cairo. The superior quality of California fruit and the abilities of our canneries is what accounts for the wide distribution of the canned product. The shipments from the State by land and sea since 1890 have been as follows: 1890, 40,060.9 tons; 1891, 32,395 tons; 1892, 55,273.7 tons; 1893, 31,626.3 tons; 1894, 60,357.6 tons; 1895, 41,395.5 tons; 1896, 45,546.9 tons; 1897, 73,464.7 tons; 1898, 52,219.7 tons; 1899, 75,240 tons; 1900 75,556.9 tons. The year of heaviest shipment has therefore been 1900. The fruit crop was short in 1901, hence there is a falling off in that year. England's taxation of canned fruit cut down exports thither, and Australia has placed a heavy tariff on the product.

The shipments by rail in 1900 were made from the following points: San Francisco, 16,183.1 tons; Oakland, 7,770.7 tons; San Jose, 7,001.6 tons; Stockton, 4,608.8 tons; Sacramento, 6,077.8 tons; Marysville, 4,028.9 tons; other points in Northern California, 459 tons; Los Angeles, 4,172.7 tons; Orange County, 139.1 tons; San Bernardino, 616.8 tons. The principal part of the packing has long been done in San Francisco, but the great strike of last year caused a larger than usual quantity to be packed outside and for a time threatened to inflict a damaging blow on the industry.

THE OLIVE.

The olive is one of the most famous trees in the world and is the most ancient fruit tree now existing of which we have any record. In the Scriptural account of the deluge, an olive leaf is brought back

to the ark to Noah by a dove. It has been cultivated in Western Asia and Southern Europe for thousands of years and in Spain, Italy and Southern France is one of the most profitable of fruit trees. The mission fathers introduced it into California but it received scant attention till a comparatively recent period. Every part of the State below the 2000 limit on the Sierras and away from the immediate vicinity of the ocean is favorable to its growth. Its acreage is 56,310 and it is estimated that there are 2,000,000 trees planted, principally in the South, the Coast counties and Placer. In 1883 there were less than 500 gallons of olive oil made in California. In 1891 there was made 11,200 gallons of olive oil which sold at \$10 to \$12 per case of a dozen quarts or three gallons each. About 50,000 gallons of ripe olives were made into pickles which sold at from \$.60 to \$1.50 per gallon.

In April 1868, Ellwood Cooper the father of the industry, as it now exists, saw a flourishing orchard at the Mission of Santa Barbara. From cuttings at this and other Missions, the first planting was done. Since then other varieties have been introduced from Europe. The olive does not require irrigation. A well grown olive tree from 12 to 15 years old will produce in a good year 200 to 250 pounds of fruit. A large bottle of oil will be made from $8\frac{1}{2}$ pounds of olives. The ripe pickled olive of California is dark in color, rich and of exquisite flavor and is pronounced superior to that of any fruit of Europe. The counties where the industry is now carried on are Santa Barbara, Los Angeles, San Diego, Ventura, Placer, Butte, Contra Costa, Riverside, Orange, Sonoma, Napa, Santa Clara and Merced.

THE ORANGE.

The orange has been one of the most profitable fruits grown in the State, where like many others it was at first planted at the Missions. It did not however attract much attention till the Southern Pacific had brought Los Angeles and the South into connection with the rest of the United States. Then people who were interested in the industry flocked here from all quarters. Since then the industry of orange growing has kept advancing with steady stride and each year sees a larger increase in production over the

year preceding. Oranges are grown in forty-five counties of the State and in the Northern counties the crop matures the earliest. The industry became prominent between 1860 and 1870. In 1890-2 the shipments were 4,016 cars. In 1896-7 this had increased to 7,350 cars. This has steadily increased till the shipments of oranges and lemons combined, has now about reached 30,000 cars, most of which consists of oranges. The citrus fruits are grown in what is called the thermal belt, a strip of land along the foothills of the Sierras for a distance of about 700 miles and a width of a few miles to thirty. This belt is from 300 to 1800 feet above the sea level. The acreage devoted to oranges is about 65,168 acres on which are planted about eight million trees. Only a portion of these are in full bearing and it will take fifteen to twenty years for all of them to be in full bearing. The yield of some is a box a year, some more. The counties shipping oranges are Los Angeles, Riverside, Orange, San Bernardino, San Diego, Santa Barbara, Ventura, Tulare, Fresno, Sacramento, Placer, Yuba, Butte and Tehama. Returns from an orange orchard may be expected in about seven years, after that they are better year after year. It costs \$500 to \$1000 an acre to get them in full bearing.

There are no statistics available showing the separate shipments of oranges and lemons until a late period. Both are included under the common head citrus. The shipments in 1890 were 34,709.6 tons, increasing to 46,921.4 tons next year. In 1892 the exports were 34,857.5 tons; in 1893, 80,757 tons; in 1894, 58,964 tons; in 1895, 115,825.5 tons; in 1896, 99,156 tons; in 1897, 98,547 tons; in 1898, 180,658.9 tons; in 1899, 131,916.8 tons; in 1900, 226,546.6 tons; in 1901, (est.) 250,000 tons. But last season's yield, it was stated, will only give 200,000 tons. The shipments in 1900 were made as follows—the point of shipment indicating the locality of production except in the case of San Francisco: San Francisco, 76.9 tons; San Jose, 4 tons; Stockton, 5,089.9 tons; Sacramento, 439.5 tons; Marysville, 2,666.9 tons; Los Angeles, 133,864.8 tons; Orange, 13,512.3 tons; Riverside, 35,460.6 tons; San Bernardino, 29,036 tons; San Diego, 6,309.3 tons, then 90 tons were shipped by sea.

THE LEMON.

California lemons are amongst the best, if not the very best in the world. Like the orange, the lemon was introduced by the Mission fathers and with the renaissance of industry in Southern California attracted attention. The California lemon has one-third more juice than its Sicilian rival, its acid is better, it has a thinner skin and is noted for its freedom from rag. An acre of lemons will average a car load or ten tons. The lemon orchards have an area of 16,408 acres—the yield is about 1378 carloads or 463,000 boxes a year, but of course only a small part of the trees is in full bearing. Of the total crop, San Diego has 28.5 per cent, Los Angeles, 24.03 per cent; Santa Barbara, 11.92 per cent and Riverside, 11.17 per cent. California lemons have been kept as long as ten months without deterioration.

The California citron is of a superior grade and the lime does well where there is no frost.

NUTS

The State is well suited to the growth of the various descriptions of nuts generally cultivated. The walnut gives large returns when planted and the almond is in the market two or three months in advance of the foreign article. Five-year old orchards net \$100 to \$150 an acre. Pecan nuts, the hazel and the chestnut also flourish. There are about 2,500,000 nut trees in the State, of which about two-thirds are walnuts and most of the other third almond trees. During the past ten years the increase in the yield of walnuts and almonds has been rapid. The yield was in 1891, 2,624,000 lbs.; in 1892, 4,011,000 lbs.; in 1893, 3,586,000 lbs.; in 1894, 7,930,000 lbs.; in 1895, 6,470,000 lbs.; in 1896, 11,440,000 lbs.; in 1897, 12,720,000 lbs.; in 1898, 12,200,000 lbs.; in 1899, 15,800,000 lbs.; in 1900, 16,340,000 lbs.; in 1901, 14,700,000 lbs.

The shipments are about the same as the production and comparatively few are consumed in the State. In 1900 the shipments by rail were made from the following points: San Francisco, 669 tons; Oakland, 94.7 tons; San Jose, 55.5 tons; Stockton, 302.5 tons; Sacramento, 700.9 tons; Marysville, 318.9 tons; Los Angeles, 3413.8 tons; Orange, 924.6 tons; San Bernardino, 10.8 tons.

WHEAT

Wheat is the great agricultural staple of California and probably always will remain so. Nevertheless, in the early days of the mining era, we were obliged to go to Chile and Oregon for flour. This was because mining was a much more profitable pursuit than farming. But all did not succeed in the mining field and the attention of many was turned to agriculture, especially as flour and feed brought good prices and it became apparent that the soil of California was of inexhaustible fertility. Even in 1852 flour was quoted in the *Commercial Herald* at \$8.50 to \$11.50 per barrel. In the same year that paper estimated 100,000 acres as the total area devoted to crops of all kinds, of which, however, in the matter of grain, barley was the almost sole representative. But little by little the home product was increased till at last it became equal to the home demand, and later on there was a surplus for export either as wheat or flour, which then found its principal market in England and her Australian colonies. The latter have since become self-supporting in the matter of breadstuffs and have even a surplus, but England still remains our principal market for wheat. Most of our surplus is shipped to Queenstown, Ireland, whence it receives orders for final distribution and in this way much of it reaches all parts of Europe.

In 1856 the wheat crop of the State was 2,000,000 centals; in 1860, 3,200,000 centals; in 1870, 10,000,000 centals; and in 1873, 15,000,000 centals. From this it rapidly increased till in 1880 it reached its maximum of 30,000,000 centals, or 1,500,000 tons. But all circumstances were favorable to the production of a large crop that year, and though in many succeeding years the acreage has been quite as large, the figures of 1880 have never since been equalled. The value of the wheat crop of that year was forty-five millions of dollars. In 1883 the crop was 20,000,000 centals; in 1884, 28,500,000 centals; in 1885, 15,000,000 centals; in 1886, 21,300,000 centals; in 1889 it was 25,000,000 centals. Since then it has been more generally estimated in tons, and has varied from 367,071 tons in 1889 to 973,902 tons in 1899. The crop of 1900

was 615,654 tons, that of 1901, 17,500,000 centals, or 875,000 tons. The wheat crop by counties has been as follows:

	Centals
Alameda.....	70,000
Alpine.....	3,000
Amador.....	10,000
Butte.....	800,000
Calaveras.....	9,000
Colusa.....	1,400,000
Contra Costa.....	232,000
Del Norte.....	100
Fresno.....	1,120,000
Glenn.....	1,400,000
Humboldt.....	22,500
Inyo.....	30,000
Kern.....	232,000
Kings.....	125,000
Lake	40,000
Lassen.....	35,000
Los Angeles.....	160,000
Madera.....	300,000
Mendocino	60,000
Merced.....	850,000
Modoc.....	72,000
Monterey.....	600,000
Napa	42,000
Orange.....	50,000
Placer	100,000
Plumas	20,000
Riverside.....	200,000
Sacramento.....	500,000
San Benito.....	150,000
San Diego	56,000
San Joaquin.	1,250,000
San Luis Obispo....	1,250,000
San Mateo.....	9,000
Santa Barbara	270,000
Santa Clara.....	72,000
Santa Cruz.....	10,000
Shasta	60,000
Sierra.....	3,000
Solano.....	800,000
Sonoma.....	30,000
Stanislaus.....	1,250,000

Sutter.....	550,000
Tehama.....	160,000
Trinity	7,000
Tulare.....	1,300,000
Tuolumne.....	30,009
Ventura.....	200,000
Yolo.....	950,000
Yuba.....	550,000

The export trade for many a year has formed the foundation of California's export trade by sea. But it has varied greatly according to the crop as also according to the consuming capacity of our people. That has increased with the increase of population. For the harvest year ending July 1st, 1857, the export was 22,257 centals. In 1858-9 it had dropped to 123 centals. This was the lowest. For the harvest year 1866-7 it had increased to 3,636,190 centals. After many fluctuations as to quantity, the exports reached 9,822,658 centals in 1872-3. It reached 10,540,197 centals in 1879 (calendar year) and 20,006,540 centals in 1881, just after the great harvest year of 1880-1. This was the largest quantity exported in any calendar year. The years 1898 and 1899 showed the smallest exports in twenty years, being 3,964,817 centals and 3,245,434 centals respectively. The exports for 1900 were 7,733,997 centals, and for 1901 9,284,940 centals.

California white wheat has no superior anywhere and can rarely be equalled. The wheat grown in the great valley excels in dryness and whiteness of color and thinness of skin. That grown on the coast is mostly of an amber color. San Luis Obispo, Stanislaus and Monterey counties produce more milling wheat than shipping. The area that can be devoted to wheat culture, can, with irrigation and proper cultivation, be made to produce sufficient to supply the wants of the United States to-day. That area in the Sacramento and San Joaquin Valleys is estimated at twenty millions of acres. The average yield per acre is 10 to 15 bushels in sandy soil, 20 to 30 bushels in the Sacramento and San Joaquin Valleys and 40 to 50 bushels in the river bottoms. The area for the past twenty years has varied from 2,500,000 to 3,000,000 acres. Much, however, of what has been planted to wheat is every year cut for hay, so that

an average of the actual area sown to this cereal and afterwards harvested is no easy matter.

The destination of California wheat exported has been already indicated generally. The following figures give the countries to which clearance has been made for the past year:

Great Britain and Ireland....	7,976,609 centals
St. Vincent.....	781,925
Peru.....	165,428
Chile.....	246,047
Spain.....	113,699

There will be a much larger market in the Orient for our wheat and flour than has ever been the case before, especially in China and the Philippines, although Russia will be a competitor from her vast area of agricultural land in Siberia and Manchuria. The market price of wheat during the years when its culture has been a marked feature of our agriculture has varied a great deal, ranging as extremes from 80 cents to \$2.00 per cental. For the past year the average value of shipping wheat has been \$1, of milling \$1.02½, but it has been lower. These are the prices in San Francisco. Prices in the country are somewhat less, and the fact that Eastern wheat is handled in bulk and California in sacks, is against the farmer.

The construction of the Nicaragua Canal will be of the greatest benefit to the California farmers, as it will reduce freight to a minimum. Forty and fifty shillings, even thirty shillings freight, will belong to a by-gone age, and twenty-five shillings will be the highest that can be charged. That would make a difference of \$2.43 per ton in the price of wheat, and with a million ton crop would mean nearly \$2,500,000 more in the pockets of the farmers. The lessened importation of coal, consequent on the use of oil, will bring fewer vessels for grain chartered here from Australia, but steamers of large tonnage will take their place via the Nicaragua Canal, and before that via Cape Horn.

FLOUR

Ever since we began to grow more than enough wheat for our own consumption, California flour has been a factor in the markets of the world. We commenced bravely enough away back in the fif-

ties and shipped abroad in the year ending July 1st, 1857, 36,541 bbls. The next year there was little or none to ship, and the total was only 5,387 bbls. But the trade picked up again, and by July 1st, 1861, there was shipped for the harvest year 197,181 bbls. For the harvest year 1866-7 the exports were 465,337 bbls. For the calendar year 1869 they were 427,497 bbls.; to China and Japan, 163,592 bbls.; to Australia, 69,109 bbls.; to South American countries, 70,706 bbls.; to Great Britain, 26,751 bbls.; to New York, 22,976 bbls.; to Hawaiian Islands, 7,743 bbls.; and to Mexico, 8,718 bbls. In 1873 the exports were 479,417 bbls., including 245,708 bbls. to Great Britain, 135,457 bbls. to China and Japan, 11,215 bbls. to New York, etc., and 8,268 bbls. to the Hawaiian Islands. To South America, Mexico, etc., the exports had fallen off. The export trade in flour continued to increase and in 1882 had reached 959,889 bbls. In 1884 it was 1,246,218 bbls.—this being the largest in the history of the trade. For many years we had a big trade with Great Britain, but this gradually fell off and it no longer forms an appreciable factor in our flour trade. The shipments in 1900 reached 1,190,603 bbls., valued at \$3,671,963. Here the heaviest shipments were to China and Japan—639,588 bbls. to the former and 92,646 bbls. to the latter, a total of 732,234 bbls., or nearly five fold those of 1873. The shipments to Great Britain in 1900 were only 49,906 bbls.; Central America took 156,064 bbls.; the Hawaiian Islands, 130,000 bbls.; and South America, 67,433 bbls. We shipped 12,837 bbls. to the French colony of Tahiti and 11,749 bbls. to the United States of Colombia. Mexico took 14,288 bbls. To British East Indies went 7,330 bbls. To Siberia the quantity fell off from former years, being only 4,872 bbls. To British Columbia we sent 873 bbls., and to Apia 687 bbls. To Guam we sent 1,350 bbls., and to the Philippines barely 3,266 bbls., exclusive of Government shipments, which must have amounted to 90,000 bbls. for our forces there. No doubt large quantities of flour were re-shipped from Hong Kong to Manila. The trade in 1901 has been larger than that of the year preceding. During the latter half of the year there has been a great increase in the shipments to China. Every week a steamer takes out 10,000 to 16,500 bbls., and for the last six months the total has been fifty

per cent greater than in 1900. There has been quite a large increase too in our trade with Central and South America. To the United States of Columbia (Panama) it has nearly doubled, and to the Republics of Ecuador, Peru and Chile it has doubled during the last half of 1901 as compared with 1900. To the Hawaiian Islands the shipments have been about the same as in 1900. Our direct shipments to Manila have increased in the same period, but to Asiatic Russia they have fallen off altogether, not a pound being shipped.

San Francisco used to be the great flour milling center of the State while the Starr Mills in the Straits of Carquinez were another, but the glory of both has departed and now Stockton is the center.

BARLEY.

Barley for feed was one of the most important articles of commerce in early California and it was largely imported. It was one of the first to attract the attention of the farmer though it never reached the importance of wheat. Now California produces more than any other State in the Union and indeed, one-fourth of the total product of the United States, but it sometimes reaches to one-third instead. There is no finer barley grown in the world, the soil and climate being especially favorable to it. The average yield is 30 to 35 bushels to the acre. The principal producers of barley are San Joaquin County, San Luis Obispo, Tulare and then Merced, then Orange. The crop varies according to the year—dry or with sufficient rainfall, but it runs from 250,000 to 450,000 tons. The two largest years of production have been 1899 and 1901. Of the total production about one-half is consumed in the State in good years like 1901 for instance. The home consumption is about 254,000 tons.

Our brewing and Chevalier barley commands the highest price in the markets of the United States and Great Britain. Chevalier is the favorite variety in the Bay and Coast section of the State and commands the highest prices; the ordinary bearded barley is preferred in other sections. A good deal of barley in the State is every year cut for hay. The export trade has been gradually increasing

and during a part of 1901 we shipped more barley than wheat. Great Britain is our principal customer. The exports grew gradually from 66,368 ctls. in 1856-7 to 349,990 ctls. in 1865-6. In the calendar year 1887 they reached 1,027,803 ctls. and in 1896, 3,873,005 ctls. The exports in 1900 were 2,498,494 ctls.; in 1901 they were the largest of all—4,114,782 ctls. During the year several cargoes cleared from this port for St. Vincent. The total yield of 1901 was distributed about as follows:

	Centals
Alameda.....	210,000
Amador.....	60,000
Calaveras	20,000
Colusa.....	134,000
Contra Costa....	280,000
Del Norte.....	500
Fresno.....	287,000
Glenn.....	265,000
Humboldt.....	58,800
Inyo.....	3,000
Kern	130,000
Kings	40,000
Lake.....	20,000
Lassen.....	12,000
Los Angeles.....	250,000
Madera.....	200,000
Mendocino	108,000
Merced	500,000
Modoc.....	100,000
Monterey.....	460,000
Napa.....	24,000
Nevada.....	5,000
Orange	500,000
Placer.....	40,000
Plumas.....	40,000
Riverside.....	400,000
Sacramento.....	170,000
San Benito.....	100,000
San Diego.....	33,000
San Joaquin.....	1,000,000
San Luis Obispo..	1,000,000
San Mateo.....	40,000
Santa Barbara...	540,000

Santa Clara.....	73,000
Santa Cruz.....	20,000
Shasta.....	12,000
Sierra.....	40,000
Solano.....	500,000
Sonoma.....	30,000
Stanislaus.....	480,000
Sutter	100,000
Tehama.....	200,000
Trinity.....	700
Tulare.....	685,000
Tuolumne.....	300,000
Ventura	263,000
Yolo	120,000
Yuba.....	100,000

OATS.

There is a large area of the State well suited to the cultivation of this cereal, especially in the Northern and Coast sections. The quality of the cereal raised is excellent. The cultivation is increasing, especially in the northern counties. The weight is greater than that of the Eastern oats. The area sown is about 60,000 acres and the product 700,000 ctls. in 1900 and about the same in 1901. The production by counties was as follows :

	Centals
Alameda.....	2,000
Alpine.....	800
Amador.....	3,200
Butte.....	3,500
Calaveras	2,000
Colusa.....	3,200
Contra Costa....	18,400
Del Norte.....	8,000
Fresno..... .	8,000
Glenn.....	1,200
Humboldt.....	168,000
Inyo.....	8,000
Lake.....	6,000
Lassen.....	4,000
Los Angeles....	21,600
Marin'.....	4,800
Mendocino.....	80,000

Modoc.....	2,000
Monterey.	112,000
Napa.....	24,000
Nevada.....	4,800
Placer.....	12,000
Plumas.....	32,000
Sacramento.....	160,000
San Benito.....	13,000
San Diego.....	20,000
San Joaquin.....	1,600
San Luis Obispo.	80,000
San Mateo.....	24,000
Santa Barbara...	111,600
Santa Clara.....	600
Santa Cruz.....	80,000
Shasta.....	2,400
Sierra.....	8,000
Sonoma.....	64,000
Stanislaus.....	500
Sutter.....	8,000
Tehama.....	16,000
Trinity.....	1,600
Tulare.....	3,200
Tuolumne.....	3,200
Ventura	8,000
Yuba.....	16,000

The market price here is generally \$1.00 to \$1.47½, according to quality.

CORN.

The southern counties of the State are well adapted to the growth of this cereal, but the production is very limited. There is some grown in the San Joaquin Valley. Egyptian corn is sown when the barley crop is reaped and is harvested by the time the farmer is ready for barley again. From 60 to 125 bushels of Indian corn are raised to the acre. During the past two years, we have raised very little corn, most of our supplies coming from the East. When there is a good crop we find a market for our surplus in Mexico and Central America. The area under crop at last report was 45,500 acres the production 663,040 cts. The several counties contributed as follows:

	Centals
Alameda.....	4,200
Amador.....	21,000
Butte.....	30,000
Calaveras.....	700
Colusa.....	16,800
Contra Costa....	22,400
Del Norte.....	1,000
Fresno.....	4,200
Glenn	4,200
Humboldt.....	22,400
Inyo.....	33,600
Kern.....	1,500
Lake	10,000
Lassen.....	56
Los Angeles....	33,600
Mendocino.....	3,000
Monterey.....	3,000
Napa.....	47,000
Orange	58,000
Placer	5,000
Sacramento.....	22,400
San Benito.....	8,400
San Diego.....	9,800
San Joquin....	1,000
San Luis Obispo.	6,600
San Mateo.....	11,200
Santa Barbara...	20,000
Santa Clara.....	4,200
Santa Cruz.....	25,000
Shasta.....	1,000
Sonoma	14,000
Stanislaus	1,200
Sutter.....	1,500
Tehama.....	2,800
Trinity.....	1,500
Tulare.....	8,900
Tuolumne.....	660
Ventura	20,000
Yolo.....	20,000
Yuba.....	1,000

The price in San Francisco varied in 1901 from \$1.00 to \$1.40 per cental.

RYE.

We raise 220,000 to 250,000 centals of rye from about 40,000 acres, most of it exported to Antwerp by way of San Francisco. The export movement is from one to three cargoes a year.

The price in 1901 in San Francisco was from \$72½ to \$87½ per cental.

HAY.

California generally has a large hay crop, which is generally more renumerative than the cereal crops. The price varies very much. Good wheat hay sells at from \$6.50 to \$10.50 per ton and sometimes the crop commands \$20 per ton. The price varies as the product as we have very little export demand except from the Hawaiian Islands. The area varies greatly as wheat, barley and oats are sometimes cut very largely for hay, sometimes very lightly. The average area may be given at 1,500,000 acres. The average product 2,250,000 tons, including what has been sown for cereal crops and afterward cut for hay. The product in 1901 was as follows:

	Tons
Alameda.....	67,500
Alpine.....	4,000
Amador.....	35,000
Butte.....	40,000
Calaveras.....	22,000
Colusa.....	22,000
Contra Costa....	130,000
Del Norte.....	31,000
Fresno.....	62,000
Glenn	24,500
Humboldt.....	35,000
Inyo.....	37,000
Kern.....	19,500
Kings	18,800
Lake.....	16,000
Lassen.....	2,000
Los Angeles.....	60,000
Madera.....	13,000
Marin	22,000
Mendocino.....	40,500
Merced.....	60,000

Modoc.....	60,000
Monterey.....	55,000
Napa.....	63,000
Nevada.....	21,150
Orange ¹	28,900
Placer.....	43,000
Plumas.	25,000
Riverside.....	10,000
Sacramento.....	72,550
San Benito.....	52,000
San Bernardino..	60,000
San Diego.....	45,000
San Joaquin.....	62,000
San Luis Obispo.	77,000
San Mateo.....	28,000
Santa Barbara...	60,000
Santa Clara.....	66,000
Santa Cruz.....	6,300
Shasta.....	21,000
Sierra.....	35,000
Siskiyou.....	50,000
Salano.....	60,000
Sonoma.... .	53,000
Stanislaus.....	16,500
Sutter.....	18,000
Tehama.....	66,000
Trinity.....	22,000
Tulare.....	37,250
Tuolumne.....	22,000
Ventura.....	28,000
Yolo	42,000
Yuba.....	40,000

CALIFORNIA VEGETABLES.

This State is noted not only for its fruits and cereals, but also for the variety, abundance and superior quality of the vegetables grown within its borders. The principal description as regards the extent of cultivation are beans, potatoes, onions, tomatoes, asparagus and celery and not only do we supply our home demand but we make heavy shipments to the East and minor shipments to foreign countries. Owing to the fertility of our soil and our genial climate, the vegetable product of our farms is superior to the aver-

age of that produced in the United States. The shipments of vegetables by rail in 1900 were 40,561.7 tons of which 10,513.1 tons were from San Francisco, 19,925.1 tons from Los Angeles, 4,355.3 from Sacramento, 3,204.5 from Stockton, 606.7 from Orange, 267.4 from Oakland, 214.9 from San Jose, 93.9 from Marysville, and 1380.-8 from other points. The shipments of canned vegetables were 3,115.9 tons—1956.4 tons from Oakland, 752.2 from Sacramento, 209.2 tons from San Francisco, 126.8 tons from San Jose, 41.3 tons from Los Angeles and 30 tons from Stockton. The course of the rail export trade has been as follows: 6,978.4 tons in 1893; 4,276.6 in 1894; 3,612.6 tons in 1895; 1,130.6 tons in 1896; 4,243.8 tons in 1897; 3,045.6 in 1898; 2,613.6 tons in 1899; and 4,367.8 tons in 1900.

POTATOES.

The production of potatoes in the State in 1900 was very large comparatively—a total of 3,000,000 bushels or 1,800,000 cts., of which the greater part found a market in San Francisco. The acreage was 30,000 acres. The principal foreign markets were the Philippines and Mexico and Central America.

ASPARAGUS.

There is no doubt that California has the finest asparagus grown in America. It is raised principally in the Sacramento Valley and is largely used for canning. The growth of the trade in canned asparagus has been great.

There are about 3,000 acres under asparagus this year in Sacramento and San Joaquin Counties, 800 acres in Santa Clara and 400 acres in Alameda—altogether 4,200 acres. The yield will be 8,000 tons, which will make 225,000 cases of canned asparagus, a notable increase over 1901.

BEANS.

The bean product of the State will average 1,150,000 sks of a total tonnage of 150,000,000 lbs. of a value of \$3,500,000, principally raised in San Luis Obispo and Santa Barbara and most of which are shipped East. The Lima bean is particularly grown to perfection and is esteemed as the finest in the world.



BEET SUGAR.

As it was known that cane sugar could not be profitably cultivated in California, attempts were made from time to time to find a substitute for it but without much success. Amongst other projects was one to produce sugar from melons which was a failure. Attempts were made at beet culture as early as 1856 in different parts of the State but they were financially, failures. Nevertheless, the industry continued to be prosecuted in Alameda County with varying success. It was not, however, till Claus Spreckels, President of the California Sugar Refinery, took the matter in hand that any financial success was achieved. Mr. Spreckels had previously made a great success in the business of sugar refining and concluded that after all, it was possible to make a financial success of California made sugar. But in order to perfect himself thoroughly in the business, he visited Germany and studied it there thoroughly, furnishing himself at the same time, with the best description of seed and the latest improved machinery. Then the sugarie at Watsonville was started and since that time the beet sugar industry has been a success in this State. Other capitalists invested their money and sugarsies were started at Chino, Alamitos, Salinas, etc. The industry has grown steadily during the past few years but the occurrence of dry years has prevented it making as good a showing as it would otherwise have done. Irrigation, however, will remedy that and when this is perfected the sugar production of the State will be one of the most important features of our agricultural industry.

The area especially suited for beet growing in the State embraces some 750,000 acres. With rotation of crops, and a beet crop every third year, it is estimated that this area can produce 2,500,000 tons of beets and 350,000 tons of sugar annually. And as the consumption of the United States is 2,250,000 tons per annum and is rapidly increasing it may be seen that there is a never failing market for beet sugar at home. The annual value of the industry to the State without taking any account of by-products would be \$35,000,000. One acre of beets will average 14 to 15 tons which at \$4 per ton makes returns of \$56-\$60 out of which \$30 to \$40 has to be charged against expenses, leaving a handsome margin to the grower.

Beets raised in California have a higher saccharine value than those raised in Europe or in any other State in the Union, yielding 15 per cent of sugar when in other States, the highest is 13 per cent.

The annual yield since 1888 has been as follows : 1888, 1910 tons; 1889, 2,457 tons; 1890, 3,351 tons; 1891, 3,074 tons; 1892, 6,887 tons; 1893, 9,888 tons; 1894, 18,615 tons; 1895, 23,827 tons; 1896, 31,815 tons; 1897, 35,280 tons; 1898, 18,086 tons, 1899, 42,100 tons; 1900, 30,319 tons; 1901, 80,000 tons. Of the 1900 crop, Santa Cruz yielded 12,500 tons; Alameda, 4,186 tons; Contra Costa 1,329 tons; Merced, 1,896 tons.

Besides the advantages already enumerated, California has others in the production of beet sugar. The length of the season allows the beets to ripen much earlier than in Europe or the northern States of the Union. This gives a much larger time for harvesting and manufacturing and enables a factory to have a much larger output than in any of the other countries where the beet is grown,

The beet industry as well as the cane industry of the South and of Hawaii is now threatened by the proposed reduction of duties on Cuban sugar. It is claimed that this is necessary to the prosperity of the Cuban State. That this is not so is shown by the fact that previous to the Cuban insurrection the planters paid our tariff duties and a heavy internal revenue to Spain, and were sufficiently well off to come to the United States, where they were liberal spenders. In 1895, the year before the insurrection, we imported 1,100,000 tons of sugar from Cuba, but the importations fell off till our importations were only 280,000 tons. They had, in 1901, risen to 800,000 tons, which shows that with the tariff the business is still profitable. Here in California the industry is in its infancy. But even with this, we are spending as much for labor as they are in Cuba for their whole output, and one factory alone spent \$200,000 for fuel in a year. For every ton of foreign sugar imported there is spent in the United States \$6.50; for every ton of domestic sugar, \$65 to \$75. Our sugar lands require cultivation every time we raise a crop, but in Cuba the only tillage needed for years is a little harrowing in the Spring.

OUR MANUFACTURES.

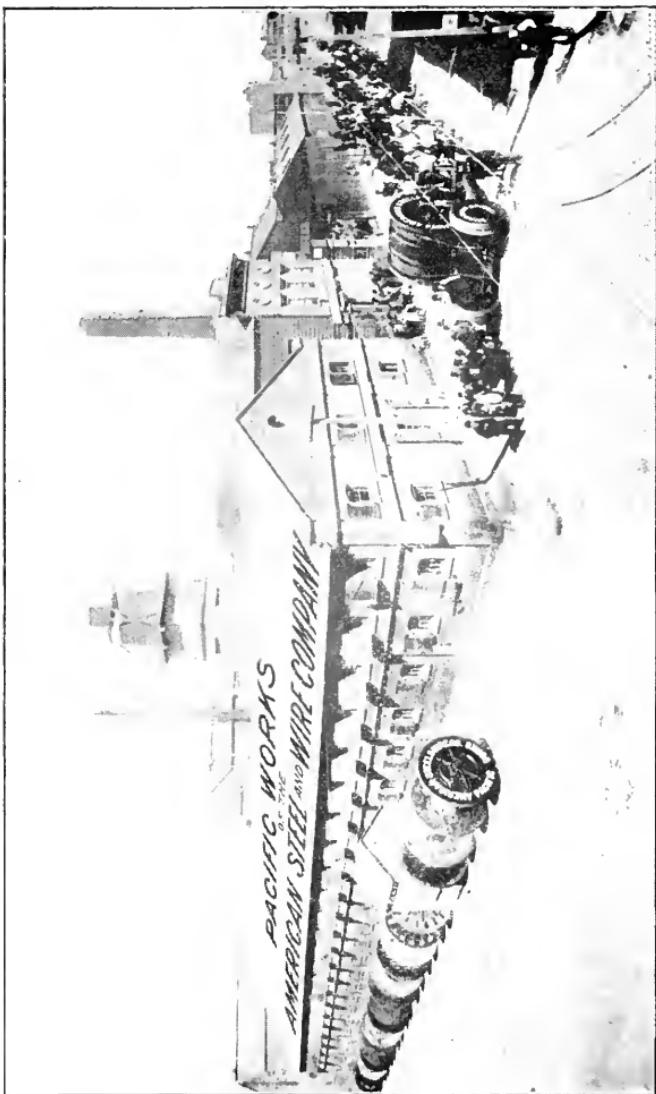
Although California has not held the position in the industrial field to which we deem her entitled, she nevertheless is, in the amount manufactured per capita, ahead of most of the states, though in this respect falling behind the New England and the Middle States. The total for the State in 1890 was \$213,403,996; in 1880, \$116,218,973, showing ten years of unusual activity, the total having nearly doubled in that time. The ten years ending with 1900 were not nearly so prosperous for the State, and our manufacturers had to stand the strain of an unusual Eastern competition. Hence, the increase was comparatively small, while in some cases there was a falling off. The total for 1900 was \$302,874,761. This, however, shows an increase of 42 per cent.

The manufacturing industry of San Francisco in 1890 was given as having a value of \$135,625,754, an increase from 1890 as great as that of the State itself. But from causes already referred to, it not only did not increase, but retrograded in the ten years between 1890 and 1900, the figure of the census in the latter year being \$133,069,416. There were in 1900 4,002 establishments; in 1890, 4,059; hands employed, 1900, 41,988; in 1890, 48,446; wages paid in 1900, \$22,037,027; in 1890, \$30,979,374; material used, 1900, \$79,492,952; in 1890, \$78,656,470; capital, 1900, \$80,103,367; in 1890, \$74,834,301. The increase in the capital and in value of material suggests increased competition and cost of materials, and part of the falling off in value must be attributed to sales at lower prices. These figures include baker's bread and butcher's meat, carpentering, blacksmithing, etc., which, though they may be classed as industries, are not generally placed under the head of manufactures. Without these, the product of the manufactures for 1900 in San Francisco may be placed at \$110,000,000. The strike lowered this in 1901, and the product of the manufacturing industry cannot be placed at any figure above \$105,000,000 when the whole year is taken into consideration. The value of the various industries in 1900 may be given as follows:

Bags	\$ 650,000
Barrels and Cooperage.....	700,000
Beer.....	3,000,000

CALIFORNIA STATISTICS

Bookbinding, etc.....	2,000,000
Boots and Shoes.....	3,000,000
Brass Founding, etc.....	800,000
Carriage and Wagon manuf're....	350,000
Coffee and Spice, ground, etc....	3,000,000
Cigars, etc.....	1,750,000
Chemical Works, etc.....	1,500,000
Biscuit and Cracker Bakeries....	1,500,000
Candy.....	700,000
Cordage.....	700,000
Cloaks, etc.....	500,000
Clothing, Men's.....	2,500,000
Electric Lighting, etc.....	2,000,000
Electric Goods.....	550,000
Foundries, machine shops and other iron work.....	7,565,000
Flour of Wheat.....	510,000
Other Mill Stuffs.....	1,000,000
Fruits, etc., Canned.....	3,000,000
Gas and Electric Products,.....	3,000,000
Glassworks.....	1,300,000
Fertilizers.....	400,000
Gloves.....	500,000
Hats.....	410,000
Jewelry.....	800,000
Lead and Paints.....	1,075,000
Leather, etc.....	1,150,000
Malt.....	512,000
Millinery.....	1,000,000
Provisions.....	2,500,000
Printing, Newspapers, Book, Job, etc.....	7,000,000
Rubber Goods.....	1,000,000
Saddlery, etc	500,000
Saw and Planing Mills, etc.....	1,300,000
Lumber used in Building, etc....	2,750,000
Shirts, Underwear, Men's and Women's	2,000,000
Ship Building.....	3,500,000
Soap and Candles	525,000
Sugar and Syrup.....	17,000,000
Tinware, etc	1,500,000
Woolen Goods, (Textile).....	250,000
Women's Clothing.....	3,000,000
Wool Scouring.....	2,000,000



There are altogether 1817 establishments here represented employing 31,029 men, women and children, including 3,225 Chinese. This makes a very good exhibit for San Francisco when the dullness of many years during the decade is considered. In the above list of industries only those with an annual production of \$250,000 and over are included.

CALIFORNIA IRON INDUSTRIES.

The iron industries of California had their genesis in a forge established on the shore of San Francisco Bay, on the other side of Market street in this city in 1849, by Peter Donohue. That business grew till at last it developed into the Union Iron Works, with its great foundry and shipbuilding yards. The manufacture of mining machinery was the specialty of San Francisco. Gradually other branches were added till the iron industry of the city became what it is to-day. It spread to Sacramento, Oakland, Los Angeles, Stockton, Benicia, San Leandro and other places, but the bulk of the business is done in this city. Stockton is the great center of the manufacture of agricultural implements, Benicia of plows, etc., and Sacramento has the rolling mills and repair shops of the Southern Pacific, etc.

San Francisco, outside of the steel ship building business, has iron and steel industries that total up \$7,565,000 in value in an ordinary year. Such was the case in 1900, but the great strike which began May 20th cut down the business of the year materially, and the value of last year's production cannot be placed at a figure in excess of five million dollars. The principal departments of the iron trade in San Francisco are the manufacture of mining machinery, street car cables, wire rope, castings, boilers, saws and other tools, gasoline engines, stoves, structural iron, pumps and pumping machines, irrigating machinery, sheet iron pipe, bolts and nuts, wire goods.

San Francisco and her sister cities make the best mining machinery in the world. It is in demand in Mexico, Central America, Peru, Australia and New Zealand, China, Korea, Asiatic Russia, British Columbia, Alaska and the Northwest Territory, etc. We

have shipped boilers to Asiatic Russia. They are better than those made elsewhere in the United States. Our agricultural machinery has found a market in Mexico, Central America and in the Orient. Our saws are preferred in the Orient. Our water pipe and pumping and irrigating machinery finds a market in the Hawaiian Islands, and in Mexico and Central America as well. There has been quite a demand for our gasoline engines in Australia. The gasoline engine was invented by a San Franciscan, and was first manufactured here. There has been an export demand for our stoves, but they principally go to supply the home trade.

STEEL CABLES AND WIRE ROPE.

It is now thirty years since wire was first manufactured in San Francisco. The business in that and cables used in the mines was carried on by A. S. Hallidie, the inventor of the street car cable system. That has, in our day, expanded into an immense industry—the manufacture of cables of all kinds, which forms a part of the business of the American Steel and Wire Company. Cables are made for all parts of the coast and of all descriptions, from the smallest sizes to the great ocean cables that join continent to continent.

THE POWDER INDUSTRY.

The manufacture of powder and explosives on this coast has been a most successful one. It began at the organization of the California Powder Works in 1862. Then followed the Giant, the Judson, the Vigorit, etc. These manufacture the various descriptions of dynamite, to which the California adds cannon, smokeless, black powder and sporting. The dynamite is all made in Contra Costa county. The California Powder Works have established a regular town—Hercules—with a population of about five hundred. The production of dynamite runs from 2,500,000 to 3,000,000 lbs. a month—33,000,000 lbs. in 1901 valued at \$3,600,000. In Santa Cruz County the manufacture of black and sporting powder has been carried on since 1862. Here are also manufactured the celebrated smokeless and brown prismatic powder for the U. S. Government. During

the war with Spain, California led America and the world in their manufacture. There is a big export demand for our explosives all over the Pacific Coast and islands, especially in Mexico and Central America. Not a pound of Eastern dynamite is sold on the Pacific Coast.

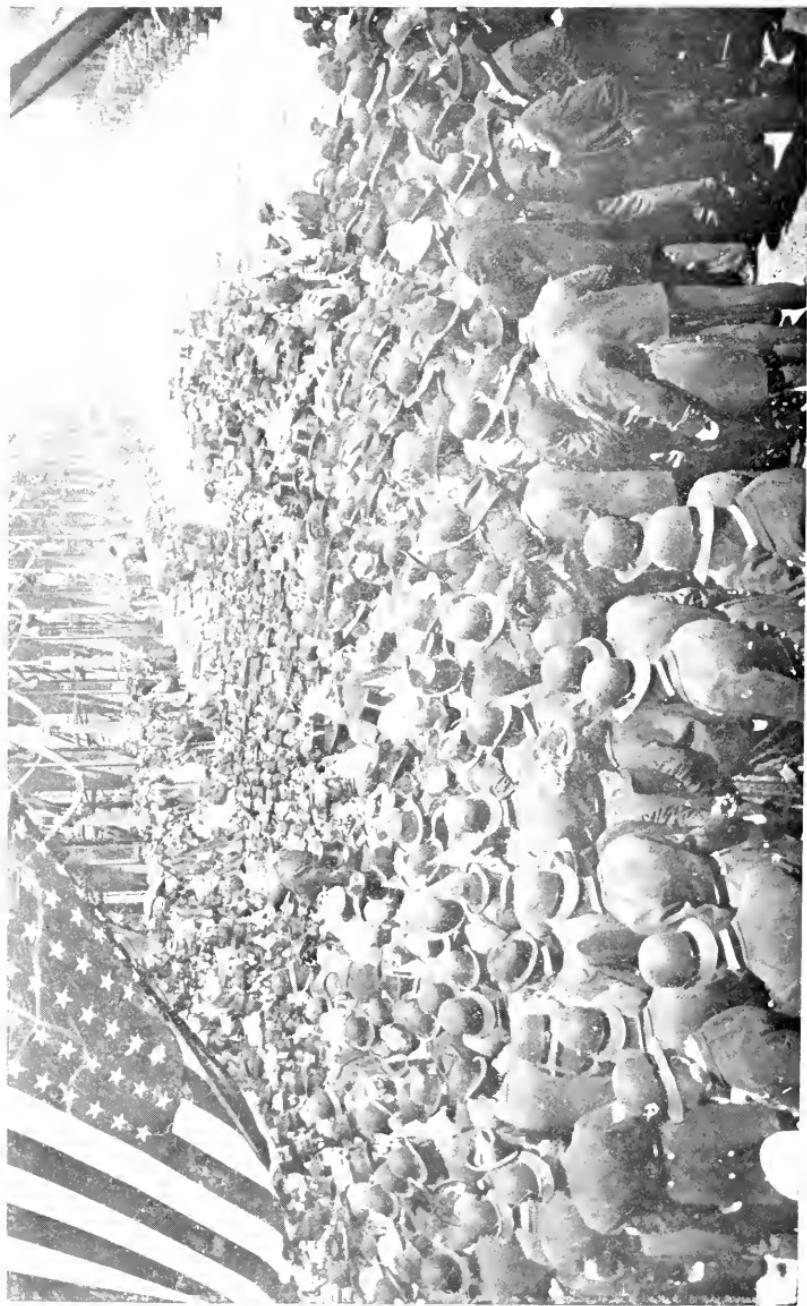
Outside of the strike, the prospects of our manufactures were never better than they were in 1901. Eastern capital has come to the aid of local capital, labor troubles are being gradually adjusted, and of more importance than all else besides, the fuel question has been solved for good. All the leading industries of the city and State have started in to use oil instead of coal, making the price of the equivalent of one ton of coal \$3.35, nearly. This places us at once on an equal footing with the manufacturer of the East. We have fuel, capital, labor that can perform more work in a given time than the labor of the East, on account of our more equable climate and a market on the shores of the Pacific that takes in one-third of all the inhabitants of the earth—a market that includes five hundred millions of people.

THE WEALTH OF CALIFORNIA.

For her population, California holds a distinguished rank in the list of States. In 1890 the total wealth of the State was \$2,533,733,627, or \$2 000 per capita, nearly, as against \$1,038 per capita for the whole of the United States. Then we were the sixth on the list, although in respect to population we were only the twenty-second. The assessed value of real and personal property in 1890 was \$1,101,136,431, or about 44 per cent of the true valuation. The assessed value of property in 1901 was \$1,241,705,803, which would give the true value about \$2,820,000,000 for the same year. The assessment by counties was as follows :

Alameda.....	89,771,005
Alpine.....	300,828
Amador.....	4,641,489
Butte.....	13,879,046
Calaveras	5,434,379
Colusa.....	11,812,546
Contra Costa....	17,079,931

Del Norte.....	2,048,444
El Dorado.....	4,039,566
Fresno.....	30,770,729
Glenn.....	10,007,218
Humboldt.....	18,099,949
Inyo.....	1,885,336
Kern.....	21,129,890
Kings.....	7,565,903
Lake.....	3,178,460
Lassen.....	3,499,650
Los Angeles.....	103,328,904
Madera.....	6,289,942
Marin.....	12,108,904
Mariposa.....	2,096,587
Mendocino.....	10,660,254
Merced.....	13,657,777
Modoc.....	3,003,805
Mono.....	1,137,276
Monterey.....	18,016,456
Napa.....	11,765,301
Nevada.....	7,06,340
Orange.....	11,245,544
Placer.....	9,097,657
Plumas.....	2,093,004
Riverside.....	12,248,709
Sacramento.....	34,346,017
San Benito.....	6,018,740
San Bernardino..	16,416,149
San Diego.....	19,961,959
San Francisco....	413,388,420
San Joaquin.....	32,023,372
San Luis Obispo.	12,313,984
San Mateo.....	14,484,957
Santa Barbara...	13,969,863
Santa Clara.....	51,920,963
Santa Cruz.....	11,222,967
Shasta.....	9,362,304
Sierra.....	1,529,604
Siskiyou.....	8,991,828
Solano.....	17,524,117
Sonoma.....	26,003,179
Stanislaus.....	12,037,410
Sutter	6,364,459



THE OREGON MADE HER RECORD - WATCH THE OHIO

Tehama.....	10,910,679
Trinity.....	1,567,998
Tulare.....	15,794,307
Tuolumne.....	6,424,670
Ventura	8,658,243
Yolo	16,034,346
Yuba.....	5,464,434
Total.....	1,241,705,803

SHIPBUILDING.

The abundance of lumber on the Coast suitable for shipbuilding caused the industry to exist on a small scale from a very early day. Large wooden vessels of 1,000 tons were built about 20 years ago at a cost equal to \$40 per ton. San Francisco and Humboldt Bays became the center of the business and have so continued. The managers of the Union Iron Works of this city were the first to introduce steel ship building in this city at a time when the attempt seemed vain and impracticable. But they kept on and not only triumphed over every obstacle but, as a matter of fact, have turned out the best and swiftest war vessels in the United States Navy. The cruiser, "Charleston" was the first vessel built for the Government on this Coast. The "San Francisco," a cruiser of 4,000 tons displacement was the second. She exceeded her contract requirement by three-quarters of a knot. The "Monterey" a double-turreted monitor of 14 knots, the greatest speed hitherto reached soon followed. She was the first monitor to cross a great ocean. Then came the "Olympia" with a speed $1\frac{3}{4}$ knots greater than the official requirement—a better ship than either the "Columbia" or the "Minneapolis" and costing a million dollars less. She was Dewey's flagship at Manila and shares in the glory of the victory. The battle ship "Oregon" making 17.79 knots doubled Cape Horn and helped in no small degree to win the day at Santiago. The gunboats "Wheeling" and "Mariette" and the torpedo boat "Farragut" followed in swift succession. The latter has a record of $31\frac{1}{2}$ knots and is the fastest vessel in the American Navy. The "Wisconsin" and the "Ohio," at the launching of the latter of which, the martyr President William McKinley attended, are amongst the latest tri-

umphs of the ship builders' art. The collier "Arago" and the steamer "Pomona" were the first steel vessels built at this port. The "Senator" and the "St. Paul" were also built here as was the ocean steamer "Peru" and the "California" with 11,800 tons displacement. The "Alaskan" and the "Arizona" with 16,500 tons each will be the largest vessels built in the United States up to the present. There are now two other steel ship building firms—the Risdon and the Fulton that employ, when in full blast, upwards of 4,000 men in shipbuilding alone and turn out a product valued yearly at over three millions of dollars.

The value of the ships built at the Union Iron Works since 1883 has been \$43,000,000, of this vast sum, one-half has gone to labor. The profits have about equalled 6 per cent on the capital invested.

Shipbuilding in 1901.

The following is a list of vessels built on the Pacific Coast during the year 1901, and which were documented at San Francisco :

		—Tonnage—	
Steamers—	At—	Gross.	Net.
Hanalei	Alameda.....	666	502
Acme	Alameda.....	416	269
Geo. F. Haller.....	Alameda.....	139	81
Sea Prince.....	San Francisco.....	58	27
Tyonic.....	San Francisco.....	59	36
Dude.....	Stockton.....	41	39
Chilkat.....	San Francisco.....	172	98
Alitak.....	Alameda.....	115	72
Tamalpais.....	San Francisco.....	1,554	937
Newtown.....	Benicia.....	77	64
Kayak.....	Alameda.....	115	73
Arctic.....	Bay City, Or.....	392	277
Warrior.....	Wilmington.....	122	83
Gualala.....	Alameda.....	225	158
Valletta.....	Benicia.....	419	368
Martha Jane.....	Sacramento.....	50	45
Mohawk.....	San Francisco.....	18	6
Ugak.....	Alameda.....	22	12
Oneida	San Francisco.....	21	7
Tojiak.....	San Francisco.....	21	8
Ugashik.....	San Francisco.....	21	8

Hilda	San Francisco	18	6
Quinnat.....	San Francisco.....	31	14
Alma.....	Rio Vista.....	11	10
Governor M. B. M.	San Francisco.....	14	10
Fox.....	San Francisco.....	20	13
Elaine.....	San Francisco.....	14	9
Union.....	Belvedere.....	13	9
Bolinas.....	Alameda.	23	16
Total tonnage		4,867	3,258
Barkentines—	At—	Gross.	Net.
Amaranth.....	Benicia.....	1,109	1,062
Lahaina.....	Oakland	1,067	994
Total tonnage.....		2,176	2,056
Schooners—	At—	Gross.	Net.
W. J. Patterson...	Aberdeen, Wash....	645	569
James Sennett....	Marshfield, Or.....	766	692
Solano.....	Benicia.....	728	692
Mindoro.....	Alameda.....	679	642
Kona.....	Alameda.	679	642
W. H. Marston...	San Francisco.....	1,169	1,110
Alvena.	Fairhaven.....	772	687
G. W. McNear....	San Francisco.....	99	88
Crockett.....	San Francisco.....	62	56
H. Eppinger.....	San Francisco.....	96	89
Otelia Pedersen...	Everett, Wash.....	789	678
Samar.....	Alameda.....	710	673
David Evans.....	Marshfield, Or.....	821	748
Onward.....	Parkersburg, Or.....	276	255
Theodore Roosevelt	San Francisco.....	62	51
Wempe Bros.....	Aberdeen, Wash.....	681	695
Katata.....	San Francisco.....	12	9
Helen.....	Sausalito.....	15	9
Shell.....	Alviso	16	13
Total tonnage.....		9,077	8,308

The foregoing, summarized, is as follows:

Rig—	No.	Gross	Net.
Steamers.....	29	4,867	3,258
Barkentines.....	2	2,176	2,056
Schooners.....	19	9,077	8,208
Totals.....	50	16,120	13,622

The builders of the foregoing vessels were as follows:

Union Iron Works—Side-wheel steamer Tamalpais for North Pacific Coast Railroad.

Risdon Iron and Locomotive Works—Screw steamers Geo. F. Haller and Sea Prince.

Fulton Engineering and Shipbuilding Works—Screw steamer Chilkat.

United Engineering Works—Screw steamers Alitak, Kayak and Mohawk.

Matthew Turner—Barkentine Amaranth, schooner Solano and side-wheel steamer Newtown.

Alex Hay—Screw steamer Hanalei and schooners Mindoro, Kona and Samar.

John W. Dickie—Screw steamers Acme and Gualala.

E. Munder—Schooners Crockett and H. Eppinger.

R. W. Schultzer—Screw steamers Tyonic and Fox.

E. H. Jarvis—Stern-wheel steamer Dude.

W. A. Boole Jr.—Barkentine Lahaina.

W. F. Stone—Schooner W. H. Marston and steamer Elaine.

W. Anderson—Schooner G. W. McNear.

W. D. Delaney—Stern-wheel steamer Valletta.

William Muller—Screw steamer Warrior.

J. E. Hicks—Side-wheel steamer Martha Jane.

Henry Schroeder—Schooner Theodore Roosevelt.

John F. Twigg—Schooner Kataata.

J. C. Beetle—Screw steamer Ugak.

J. R. Chrissy—Screw steamers Oneida, Hilda and Quinnat.

George W. Kneass—Screw Steamers Togiak and Ugashik.

John A. Lockhart—Schooner Helen.

F. C. Lauritzen—Side-wheel steamer Alma.

A. Swanson—Screw steamer Union.

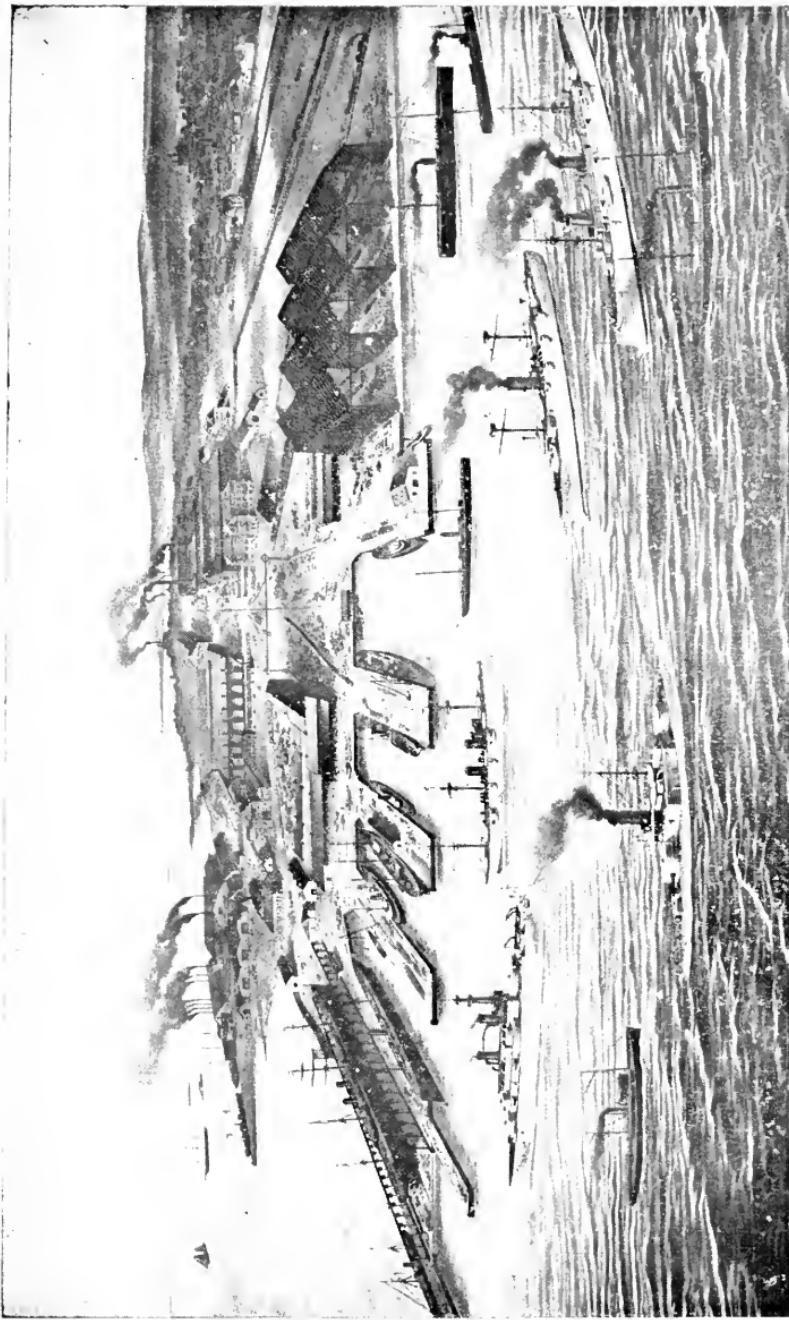
Oliver Orthy—Schooner Shell.

Charles Moebus—Screw steamer Bolinas.

The Custom House records omit the names of documented vessels built in Oregon and Washington, also of the gasoline steamer Governor M. B. M., which was built here.

In 1900 there were 51 new vessels documented at San Francisco, aggregating 29,221 tons gross, or 22,779 tons net tonnage.

In each year there are quite a number of vessels built on the Coast and which are not recorded or documented there.



UNION IRON WORKS SHIPBUILDING YARD

THE LEATHER INDUSTRY.

The leather industry is one of the oldest and one of the most successful in California. It dates back to the days of the Missions but its development is a result of the application of American capital, labor and intelligence. The tanneries of the State are abreast of any other in the world and the latest scientific appliances are made use of in them. We produce sole, harness, belting, skirting and fancy leather, and for quality we are unequalled. The oak bark of the State is the best bark for tanning in the known world and both it and extract of bark are exported in considerable quantities to Japan. It is this that makes our sole leather take the lead in every Eastern market. Most of the leather manufactured in the State is produced outside of San Francisco, in Napa, Sonoma and Santa Cruz Counties. Of the whole, which amounts in round numbers to 32,000,000 lbs. valued at \$8,000,000, about 75 per cent is shipped East or exported by sea to Japan, Australia, etc., principally to Japan, which takes 500,000 to 600,000 lbs. a year.

BOOTS AND SHOES.

The imports of boots and shoes from the East to San Francisco and this State are and have been very large—at present about 1,500,000 pairs a year, valued at \$3,000,000. The home manufacture is somewhat ahead of this as the value of the industry in San Francisco alone is about \$3,000,000 a year. We export largely, especially to Australia, which takes about \$150,000 a year. San Francisco is naturally a great center of this trade as we have not only our own supplies of hides for making leather but import largely from Oregon and Washington, British Columbia, the Hawaiian Islands, Mexico, Australia and other countries.

CALIFORNIA WINE.

California may justly claim to be *par excellence*, the wine country of America, the France of the New Continent. The vine, the ordinary Mission variety, was introduced from Spain by the Mission fathers before the close of the eighteenth century. But the industry of wine making made small progress until the gold seekers be-

gan to turn their attention to other pursuits and naturally enough, wine making was one of the first to be taken hold of. It did not however, make any great headway till in the eighties, when the production increased so much as to flood the market and prices, as a natural consequence, declined. Indeed, the decline was so serious that coupled with the ravages of the phylloxera, it was the cause of many abandoning the industry altogether. But times have changed and prices have advanced heavily during the past couple of years. And now the vineyards of the State pay well on the investment. The very best varieties of European grapes are grown in the State. A commission appointed by the Legislature went to Europe and through them the very best description of vines were introduced. The purity, flavor and wholesomeness of California wines have made them famous. Most of our California wines are sold in the United States, but there is hardly a country in the world in which they are not found. Our shipments are especially large to Mexico, Central America, and England. We ship to Germany, too. Our trade with the Orient is largely increasing. The product for a series of years has been as follows :

1892.....	15,000,000
1893.....	22,700,000
1894.....	16,000,000
1895	14,000,000
1896	13,500,000
1897.....	34,000,000
1898.....	18,529,000
1899	23,433,000
1900.....	23,677,000
1901.....	19,000,000

This has grown from a production in 1880 of 3,000,000 gallons.

The consumption of the coast is estimated at 6,000,000 gallons a year. Quite a large proportion of the vintage is made into brandy. Most of our wines are shipped overland by rail. The shipments by sea range from five to six millions of gallons annually, most of it to New York. The shipments by sea in 1900 were as follows : New York, etc., 4,803,238 gals., 69 cs.; Mexico, 170,452 gals., 790 cs.; Central America, 147,075 gals., 2511 cs.; England, 140,329 gals., 96 cs.; Hawaiian Islands, 219,856 gals., 2140 cs.; U. S. Columbia, 58,306 gals., 10 cs.; Tahiti, 71,006 gals., 1 cs; China, 91,190 gals.,

471 cs.; Japan, 84,633 gals., 217 cs.; Germany, 18,753 gals., 200 cs.; Manila, 14,107 gals., 2183 cs.; Peru, 4,231 gals., 616 cs.; Ecuador, 39,465 gals., 92 cs.; Chile, 950 gals., 70 cs., etc.; the total being 987,458 gals. and 8289 cs.

The exports by rail of wine and brandy have more than doubled during the past ten years. The figures may be given in gallons as follows: 1891, 9,530,000 gals.; 1892, 9,665,000 gals.; 1893, 13,241,800 gals.; 1894, 15,327,000 gals.; 1895, 16,113,600 gals.; 1896, 15,218,000 gals.; 1897, 13,795,600 gals.; 1898, 18,028,000; 1899, 17,427,800 gals.; 1900, 18,134,600 gals.

The exports of wine by rail in 1900 were as follows: San Francisco, 5,408,740 gals.; Sacramento, 2,561,680 gals.; Stockton, 1,391,420 gals.; San Jose, 474 180 gals.; Marysville, 439,800 gals.; Los Angeles, 163,200 gals.

There was an advance in the market price on account of the advance of grapes in 1901. The price of the latter per ton during the close of the year was \$27.50-\$32.50 in Santa Clara; \$18-\$22.50 in San Joaquin County, and \$26-\$28 in Napa.

CALIFORNIA BRANDY.

The growth in the demand for California brandy has been steady during the past two years. Previous to that time the sale of the article has been limited as its merits were not generally known. It is now, however, recognized that the distilleries of the State supply a perfectly pure article and it is finding more favor year by year. The production has not kept pace with the general appreciation accorded to it. In 1892-3 it was 2,209,117 gals.; in 1893-4, 2,007,965 gals.; in 1894-5, 1,754,000 gals.; in 1895-6, 2,100,000 gals.; in 1896-7, 1,420,000 gals.; in 1897-8, 1,250,000 gals.; in 1898-9, 1,699,035 gals.; in 1899-1900, 3,256,613 gals.; in 1900-1, 1,850,135 gals. Most of the brandy manufactured in this State is sent by rail to New York.

HONEY.

The honey crop of the past few years has been as follows: 1897, 7,878,000 lbs.; 1898, 1,800,000 lbs.; 1899, 2,822,000 lbs.; 1900, 2,208,000 lbs.; 1901, 4,800,000 lbs.

WOOL AND MANUFACTURES.

The State has been one of those famed for her wool. The common sheep was introduced here from Spain by the Mission fathers. In addition, some of the best breeds in the world have been introduced from time to time to improve our flocks. Still wool-growing and sheep-raising are no larger than what they once were. The lands that were devoted to sheep are now used in the more profitable occupation of fruit-growing, etc. Hence the number of sheep and the production of wool have fallen off very markedly. The maximum was reached in 1876, when it was 56,550,970 lbs. In 1880 it was 49,074,154 lbs ; in 1900 it had fallen off to 13,552,010 lbs. The clip of 1901 has been 20,000,000 lbs. There was a steady increase from 175,000 lbs. in 1855 to more than three hundred times the amount in twenty-one years thereafter, while now the annual average product is not much more than one-fourth of what it was in the year of the greatest output. The number of sheep, too, has decreased to about 2,000,000. It is likely, though, that the yearly production of wool in this State has arrived at its minimum and that sheep husbandry will become more and more an accompaniment of small farming. In the old days some men owned 20,000 to 40,000 sheep and many made fortunes out of them. Our mild climate is peculiarly favorable to sheep. The amount of wool will average 10 lbs. a head, which, at present prices, would make them range from 70c to \$1.50—say \$1 all round. This about equals the cost of caring for them. In their sale for mutton, the profit is found. Small herds are preferable—bands of 400 to 500.

During the past few years the manufacture of blankets and flannels has taken on a new lease of life. At one time it had an annual value of \$3,000,000. Now it has a value of \$1,000,000 a year. The year 1901 has been on the whole prosperous in the industry. Besides the articles already mentioned, we make occasionally dress goods, but they have not been able to make much headway on account of the limited field and the fact that people prefer to buy cheaper grades. The finest blue cloth in the United States has been manufactured at our woolen mills.

DAIRY PRODUCE.

Dairying in California began almost as soon as the American occupation—that is, it started in as a business pursuit, but it had very humble beginnings. In the mountain valleys adjacent to the mining camps, cows were kept to supply these camps with milk and butter. The business is now carried on in the hill regions adjoining the coast from Humboldt Bay to Point Conception, a distance of about 400 miles. The Eel River and the country around Humboldt Bay is an ideal country for the dairyman. In the interior in the Sacramento Valley, the growth of alfalfa sustains a flourishing dairy industry and the future will see a wonderful development in this respect.

The production of butter in 1901 has been as follows:

	Tons
Alameda.....	340,688
Alpine.....	16,972
Amador.....	259,730
Butte.....	128,096
Calaveras.....	166,980
Colusa.....	77,100
Contra Costa....	455,910
Del Norte.....	501,071
El Dorado.....	236,388
Fresno.....	965,042
Glenn	112,980
Humboldt.....	3,899,421
Inyo.....	121,000
Kern.....	122,088
Kings.....	637,000
Lake.....	154,322
Lassen.....	286,480
Los Angeles....	1,273,939
Madera.....	15,120
Marin	3,761,841
Mendocino.....	495,830
Merced.....	531,633
Modoc.....	80,530
Mono.....	22,760
Monterey.....	588,730
Napa	440,360

CALIFORNIA STATISTICS

Nevada.....	109,450
Orange.....	559,590
Placer.....	42,770
Plumas.....	375,621
Riverside.....	327,196
Sacramento.....	774,697
San Benito.....	132,587
San Bernardino..	184,728
San Diego.....	752,981
San Francisco...	35,000
San Joaquin.....	696,507
San Luis Obispo.	1,274,096
San Mateo.....	395,816
Santa Barbara...	757,690
Santa Clara.....	287,920
Santa Cruz.....	444,106
Shasta.....	27,840
Sierra.....	205,000
Siskiyou.....	378,186
Solano.....	549,460
Sonoma.....	3,015,327
Stanislaus.....	636,403
Sutter	422,205
Tehama.....	115,270
Tulare.....	443,480
Tuolumne.....	244,080
Ventura	99,360
Yolo	667,935
Yuba.....	83,530
<hr/>	
Total.....	29,730,882

The following has been the products of cheese in 1901:

Contra Costa....	48,230
Fresno.....	103,700
Humboldt.....	27,117
Inyo.....	26,000
Kern.....	18,258
Kings	229,260
Lake.....	73,033
Los Angeles....	780,358
Marin	332,538
Mendocino.....	54,750

Merced.	24,472
Monterey.....	547,650
Napa.....	23,480
Plumas.	12,000
Riverside.....	150,000
Sacramento.....	648,929
San Benito	227,690
San Joaquin....	38,400
San Luis Obispo.	124,963
San Mateo.....	667,368
Santa Barbara...	26,000
Santa Clara.....	568,910
Santa Cruz.....	404,101
Sierra.....	1,400
Siskiyou.....	65,378
Sonoma	153,025
Stanislaus	196,052
Sutter.....	182,150
Tehama.....	24,354

Total..... 5, 679,566

Production of butter since 1897:

1897.....	28,678,439
1898.....	23,691,023
1899.....	24,868,084
1900	28,782,859
1901.....	29,730,882

OUR HOP CROP.

California is one of the great hop-growing States and one of the great hop-growing countries of the world. The superior quality of our hops is recognized not only in the Eastern States but in England and Australasia, and to the latter the greater part of our shipments by sea are made. Hop-growing in the main has been a successful industry, although the price of hops has undergone great fluctuations, going down as low as 3 cents, and on one occasion as high as \$1.30, when all who held hops made fortunes. The area devoted to hop culture has not increased in this State of late years. In 1873, 3,500 bales were raised and the price was $32\frac{1}{2}$ c to 35c. The quotation at the close of 1901 was 9c to 12c. The area under crop is now about 6,000 acres. The California crop was 67,500

bales in 1894 and only 35,000 bales in 1896. In 1898 it was 44,500 bales; in 1899, 59,000 bales; in 1900, 36,000 bales; in 1901, 48,000 bales. The average yield an acre is 1200 lbs.

The exports from San Francisco in 1900 were 816,432 lbs. by sea, of which 493,162 lbs. went to Australia and New Zealand.

LUMBER RESOURCES.

The forests of the Pacific Coast are, with perhaps the exception of those largely unknown of Siberia, Manchuria and Central Asia, the only ones on the earth to which the world can look for supplies of timber, such as are proper to the temperate regions of the globe. And amongst these vast Pacific forests, California contains the only supplies of redwood and sugar pine to be found in the world. At the era of the American occupation, the State, estimating roughly, had about one-third of its area or 50,000 square miles, covered with forests. These of course included oak, madrone and other varieties not as valuable as the trees already mentioned. The closest estimate now made gives the State 15,000,000 acres of valuable timber trees. The size of some of the monarchs of our forests are matters of the world's wonder. Without referring to the Sequoia Gigantea there are numerous woodland giants 16 to 24 feet in diameter and 300 to 400 feet in height. A single tree has yielded 300,000 feet of lumber. From 160 acres on Russian River 24,000,000 feet have been cut. The redwood forests average 30,000 to 50,000 feet per acre. The sugar pine occupies the slopes of the Sierras and individual specimens may be found rivaling the giants of the redwood forests. The middle forest zone in the Sierras at an altitude of about 4,000 feet has a width of 15 miles. The third forest zone extends to 9,000 feet. In both, the sugar or yellow pine is the monarch of the forest. The demand for both redwood and sugar pine is increasing every year. All the sugar pine that can be supplied for a year to come has been sold for home, Eastern or Australian account. It is the only lumber that takes the place of the white pine of the East. The redwood is remarkable for the number of uses to which it can be put. It is almost fireproof and does not decay when used in damp places. It does not shrink and is one of the most durable timber trees known. It takes on a high polish, especially so do the

buhrls of the redwood. It has been used in exposed situations for half a century without showing the least change. It is in demand not only on the coast but also in the East and on all the coasts of the Pacific as well as its islands. It has been received with favor in Europe. Redwood shingles are being used all over the East, and last year 360,000,000 were shipped over the railroad. The ordinary capacity of the redwood mills under present circumstances is 335,000,000 feet per annum, of which 230,000 feet are required to meet home demands, but the capacity when working to the full extent is 500,000,000 feet in a year. The redwood area takes in the coast from just inside the border of Oregon to Monterey Bay. The cut of San Mateo, Santa Cruz and Monterey all finds a market in these counties. The production of redwood in 1901 has been as follows: Humboldt, 200,000,000 feet; Del Norte, 20,000,000 feet; Mendocino, 100,000,000 feet; Sonoma, 15,000,000 feet, Santa Cruz, 15,000,000 feet.

The exports of lumber from San Francisco for the year 1902 include as follows: Australasia, 12,218,764 feet; Great Britain, 4,071,922 feet; Hawaiian Islands, 9,473,923 feet; Mexico, 3,433,674 feet; Central America, 1,293,140 feet; Tahiti, 1,447,669 feet; China, 321,000 feet; Japan, 161,244 feet; Ecuador, 3,089,353 feet; Peru, 1,007,002 feet; Philippine Islands, 495,083 feet; New York, 394,401 feet; Germany, 134,703 feet. The total was 39,354,801 feet.

LIVE STOCK.

California is a land eminently suited for the raising of live stock. Our mountains and rolling lands are covered with all kinds of rich and succulent grasses. There are vast fields of wild oats, clover and affilaria, which are fattening in a green state. These lands extend from 32.50 to 42 north latitude.

The basis of our cattle stock was the long-horned Spanish breed, first introduced by the Missionaries. These have been crossed with the best varieties of Eastern and European stock till now we have a breed of cattle unexcelled in the world. The introduction of Durham and Devon cattle and crossing them with the native breed of cattle produced handsome, sleek, well-fed cattle, deep red in color and with short horns. The Durham is the beef cattle of California

par excellence. Amongst the breeds introduced are the Holstein, Frisian and Polled Angus, the Ayrshire and the Jersey, the latter for dairying purposes.

California has been called "the home of the horse." A splendid breed has been produced by crossing the native mustang with the best imported descriptions. For pure gait, fine form and perfect action, they are unequaled. A California horse, "Arion," brought \$125,000 and sales have been made all the way from \$40,000 up. We have the largest breeding farms in the world and sales have been made up the figure of a million dollars annually.

California should be a great State for the production of swine and pork products, and though we have some industries of that description they are few and far from what they ought to be, when the extent of our importation of Eastern is considered.

OUR FISH PRODUCT.

The coast of California and the rivers swarm with fish. The Sacramento River and San Francisco Bay especially are full of splendid food fish. The river used to swarm with salmon, the magnificent King salmon. Here the first salmon cannery on the Pacific Coast was started and for many years the Sacramento led in the canning of the magnificent fish. The pack has run as high as 250,000 cases in a year. Of late years, however, the great demand for fresh salmon for our home markets and for shipment East in refrigerator cars has cut down the pack to very small dimensions and last year it was only 17,500 cases. The coast herring, or, as it is sometimes called, the California Sardine, is found in great numbers in our waters and a considerable proportion of the sardines sold on the coast are of California origin. The actual value of the fish industry is not easy to estimate, but it is generally placed as 30,000,000 lbs. valued at \$4,000,000 a year. There is a considerable oyster industry carried on, the value of which is included in the above. The oyster beds are on the bay shore south of San Francisco.

SAN FRANCISCO

San Francisco as well as being the metropolis of California is also one of its counties and has an area of 42 square miles being the northern portion of the peninsula bounded by the Bay of San Fran-

cisco and the Pacific Ocean. In olden times it was the seat of one of the most flourishing missions in California and had a large Indian population gathered round the old Mission Church. Its surface is for the most part hilly, culminating in the Mission Mountains. Its area is sufficient to give homes to as many people as are found in the great city of London, but as a large portion is taken up by parks and reserves its future extension will no doubt carry it far southward into San Mateo County. Details as to commerce, finance and industry will be found elsewhere under their appropriate headings.

This is the age of great cities; London is careering on to the point where she will have a population of five millions, the greatest of any city on record—greater than that of Imperial Rome in her palmiest days, and unless the growth of the British Empire should cease she will not stop there. Other cities are following fast in her footsteps. Paris now claims upwards of three millions, and Greater New York has even overstepped that figure, while half a dozen great cities of Europe and America are crowding close behind. All this concentration of population results from the new conditions of the century's commerce and industry; railroads, steamships and manufactures make the great cities of our day.

Hitherto the Atlantic Ocean has been the highway of modern commerce, but ere long it must give way to the Pacific. Incontestably, the greatest ocean of earth, it must be the seat of the greatest commerce, and that commerce must have a seat and center that must be San Francisco. The Orient is now as it has been in all ages, the cynosure of the world's gaze. From the earliest ages all eyes were turned to it. Its commerce made the fortune of the ancient marts of commerce whose names shine so brightly in the twilight of history. Later on Alexandria and Constantinople flourished by its aid. Then followed the great republics of the Middle Ages, chief of whom, Venice and Genoa *il superba*, vied with the greatest monarchs in their power and overshadowed them in their wealth and splendor. London has attained her present wealth and greatness and her teeming millions through this all-important trade. As the years pass by, all that will center in San Francisco.

“Serene indifferent to fate,
Thou sittest by the Golden Gate.”

Geographically considered, we are nearer to the principal ports of China, Japan, Corea, Siberia, the Philippines, Farther India, Siam, Burmah, India and the wonderful islands of Malaysia, than any other point in the whole of North America, and as distance tells in transportation, the greater part of the trade with the United States must pass through this city, and the business houses of to-day engaged in that trade and others yet to be founded will be its nucleus. Here, as in a vast world's emporium, will be gathered the products of the east and the west for purposes of exchange, the staples of two worlds. All of the olden commerce will be a mere shadow of that wonderful trade of the future, and here will not only be centered the commerce of the Orient properly so called, but of the antipodes —the new and mighty empire of the south, where a new United States is arising in the Australias, and that new Britain of the south, New Zealand.

Indeed, it is not too much to say that San Francisco will be the future seat and center of a world's commerce. The troubles in China have opened that Empire to the world's commerce. It will take its place in the great march of nations, and what may not be expected of four hundred millions of the most patient and industrious people on God's footstool; and fast beside them is striding the people of the great island Empire of Japan, the land of the rising sun; and there is the vast area of Siberia being newly opened to civilization and commerce. All these will, in a peaceful way, be San Francisco's spoils. From the moment that peace was proclaimed in the Orient San Francisco began to grow at a mighty rate. Within thirty years from now, her population, with its suburbs, will have reached the million mark. Its wharves will stretch for miles on both sides of the bay, backed by warehouses holding the garnered riches of the world. Half a dozen transcontinental railroads will have taken the place of the two that now supply the needs of our inland commerce, a dozen steam lines will take the place of those now existing here, and floating warehouses and palaces of 15,000 to 20,000 tons will take the place of those that are now seen on the waters of our bay and the adjacent ocean. Our industries will have annual values of hundreds of millions, and our imports and exports

will be measured by similar figures instead of those that we are now called on to record. In a word, there will be as wonderful a contrast with the San Francisco of to-day as the San Francisco of to-day makes with the new commercial emporium of the fifties, and as to her farther history, who may tell. If London in fifty years has increased from a million and a half to almost five millions of people, what shall not be done by this young giant of the West in whose veins the best blood of all the finest races of the world commingles?

OUR COMMERCIAL OUTLOOK

Jan., 14, 1902.

It is exceedingly gratifying to us to look back over the year 1901 and feel that the good prophecies which were made at the commencement of the year, have been fulfilled, in regard to almost everything that concerns the welfare of the city. Naturally, San Francisco being the metropolis, not only of the State but of the Coast, we are dependent upon their well-being, for our present prosperous condition, and our bright outlook for the future, is but a reflection of that of the entire State. We continue to occupy, we might say, the center of the stage at present; that is to say, the eyes of the United States and of the world are turned upon us as the focal point of this continent, in regard to the vast Pacific and Oriental trade. Not only are we, more than ever, a favorite point in the tourist route, but what is more important, we are the point to which the eyes of the capitalists and men of affairs, are turned. Millions of dollars have been invested here from outside sources during the past year; this is only a commencement. These millions have gone not only in real estate, but into street railways and manufacturing industries of various kinds. We see evidence of this on every hand. The real estate market is an excellent barometer of commercial conditions, but somewhat slow to act, after it has shown a favorable condition, it is an evidence that this condition has existed for sometime. The real estate sales show an increase of nearly 30 per cent. over those of 1900. The bank clearings also indicate our increased prosperity, which, for 1901 show an unprecedented amount, an increase of over \$145,000,000

above the previous year, being nearly five times the amount of the combined clearings of the sea-board cities of the Coast.

Again our savings banks are overcrowded with money. These banks having gained upwards of \$9,000,000 in resources and \$9,000,000 in deposits, during the year. Our export trade has shown a very favorable increase and if we include the shipments to the Hawaiian Islands, which we included in former years and which are now considered coastwise, the amount would be increased by from ten to twelve million dollars. Great Britain is still our best customer for our wheat, having taken during the year upwards of seven million centals, and China our best customer for flour, shipments there being over 640,000 barrels. Our exports to the Orient show great prosperity; our trade with Central and South America has greatly increased, this latter being the result of direct, regular, frequent and economical transportation to those points. When transportation of this kind is afforded it is sure to result in increased traffic. The merchants of this city are now endeavoring to have established a line of steamers going direct to the Philippine Islands. As yet, we have not enjoyed the trade we should with these islands, but with such a line opened we feel that its growth will be assured. The development of the petroleum industry in this State has been a source of great benefit to this city, affording cheap fuel for industrial enterprises, which was lacking, and hundreds of our manufacturers are now using oil which formerly burned coal, the change affording a marked economy in fuel.

The production of crude oil in the State is estimated at about 8,500,000, about double that of last year. Already extensive oil refineries are being erected close to the city and arrangements are being made for economical transportation from the oil fields. Not only is this cheap fuel of benefit to factories, but ultimately will be an important factor in our commerce by affording a cheap fuel for the steamers that ply from our port bearing valuable cargoes of our products. Besides, the oil is destined to become a valuable article of export when suitable tank steamers are built for its transfer and for its use as their fuel.

Some of the cities lying close to us are using electricity for power

and light conveyed long distances from the mountain streams, in some cases the current having been carried more than 180 miles. It is possible that this system may be extended and projected into San Francisco, thus affording another means of operating our factories and furnishing us with light and power for our many needs in a cheap and convenient form.

Our city is practically free from debt, extensive municipal improvements are being inaugurated, so that in time any addition to our important position as a commercial center we will be noted as one of the best organized and most handsomely adorned cities of the world.

E. SCOTT,
Secretary Chamber of Commerce.

ANNUAL MEETING CHAMBER OF COMMERCE

At the Annual meeting of the Chamber of Commerce valuable reports were submitted. Secretary Scott presented his report showing a large increase in membership as well as a handsome increase in the cash balance over previous years.

PRESIDENT'S ANNUAL REPORT.

TO THE MEMBERS OF THE CHAMBER OF COMMERCE, SAN FRANCISCO, CALIFORNIA.

GENTLEMEN.—When, a year ago, I was introduced by the retiring President, Captain Charles Nelson, as his successor, I promised to give you an active administration, and now present our Annual Report showing a very active year for the Chamber.

Many subjects have been acted on by your Board of Directors during the past year. Some we have succeeded in carrying through; others are now pending. Our city has been visited by the late President McKinley and his Cabinet. We also have been called upon to forward to Washington testimonials of our deep sorrow at the loss the nation has sustained in the assassination of the man who has done so much to build up the commerce of the Pacific Coast with the Orient.

Much has been said about a direct steamship line with the Philip-

pine Islands. In this connection, in company with the President of the Merchant's Exchange and a representative of the Board of Trade, I visited Washington and laid the case before the late President McKinley and Secretary Root. Today we see by the daily papers that the Secretary of War advises the sale of transports and encourages the establishment of a private steamship line between the United States and Philippine Islands. This is going further than we had ever dared hope and I am still of the opinion that it would be better for the commercial interests to maintain transports under government management until we withdraw the troops from the Philippine Islands and to supplement the transport service with private lines that should have a certain percentage of freight guaranteed to them by the government.

On the first of December the Chamber sent a Special Representative, Mr. Wm. M. Bunker, to Washington to look out for the interests of San Francisco and the State of California. We are now receiving almost daily letters and telegrams from him keeping us posted of all matters of legislation pertaining to the Coast. The question of a new Custom House on the site of the old Post Office is having his closest attention at present. Another question of vital interest to San Francisco is the restoration to this port of the purchasing of Indian supplies. According to recent letters from our representatives, great progress is being made in this matter. Nor do we forget the importance of urging the River and Harbor Committee to dredge the channel between Mare Island and Vallejo and in San Pablo Bay.

Many other subjects we are pressing to our representatives and I now call upon our members to bring forward suggestions and such measures as may be for the general interest of the City and State

Some of the work that has been done during the year consists of:
Having a first-class cruiser named the "California."

The China Basin lease has been accomplished.

\$90,000 has been appropriated for a relief lightship and bids will soon be opened for the building of the same.

We have successfully protested against the movement of U. S. Transport service from the port of San Francisco.



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HON. JAMES D. PHELAN
EX-MAYOR OF SAN FRANCISCO

The Philippine Tariff Commission visited this city and were entertained at lunch by your Chamber.

Members interested in flour, canned goods and other articles were given an opportunity to lay their case before Commission so successfully that the tariff on flour has been reduced from 75 cents to 40 cents per hundred kilos, and material reduction made in canned goods.

The question of national irrigation was taken up during the months January, March and December and is now pending before the House of Representatives.

The Federal Fruit Quarantine Law was taken up during the month of February and is also pending.

The Secretary of the Navy was petitioned in April and September to have the repairs to the vessels of the Asiatic Squadron made at this port. The matter is now pending.

We have also succeeded in getting the promise of the government to establish wireless telegraph between the Farallone Islands and the mainland.

The question of impounding dams above Marysville has been gone into carefully and the matter taken before the Trans-Mississippi Congress July 16th for the purpose of receiving Government aid.

The Metric System of Weights and Measures for national use throughout the United States has been endorsed by this body.

Your Board of Trustees have endorsed the bill for the improvement of consular service. The Chamber has been honored by a visit from the Hon. T. S. Sharretts, U. S. Commissioner to China.

The National Bankruptcy Law has been gone into very carefully and in conjunction with the Board of Trade, we have endorsed the bill now pending before Congress.

The Tariff on rope and cigars from Manila, at the suggestion of some of our members, we have concluded should continue in force and not be placed on the free list, as it will compete with the labor of California.

The question of a tariff on sugar, citrus fruit, etc., from Cuba has been gone into very carefully. A special Committee of your Board of Directors was appointed to confer with the members interested

in these matters, and telegrams and memorials have been sent to Congress in accordance with their wishes.

During the year our city has been called upon to witness a struggle between labor and capital, and, while this Chamber took no sides, it felt itself called upon to communicate with the Mayor, urging on him strong action.

Your Board of Trustees have endorsed the action of the Government in creating a Department of Commerce and Industries.

The Chamber during the year has been the recipient of a valuable gift of the early records of commerce of San Francisco.

The Secretary of War has been petitioned to establish at least one of the military instruction camps, about to be established throughout the Union, in California, and the result is that General Young, in command of the forces of the Pacific, has received instructions to forward to Washington all information in regard to a suitable site for the camp in this State.

Your Special Committee in charge of matters pertaining to the water front have again urged on the Harbor Commission the necessity of dredging Channel street, and the contract has been let.

The Committee in charge of the Weather Bureau has recommended that life lines and life buoys be presented to the Point Reyes Station. Your Chamber has recommended that, at a suitable time, U. S. Coastwise Navigation Laws be established with the Philippine Islands.

Many other matters have been taken up by your Board of Trustees, and I know that the incoming Board feels a strong desire to receive the co-operation of the members of the Chamber in all matters pertaining to the trade and commerce of the port.

Our Senators and Representatives have shown great activity during the session of Congress, and have accorded to our Chamber many opportunities to assist and co-operate with them in matters pertaining to the Coast, for which, I know, you will agree with me in extending to them heartiest thanks.

The other commercial organizations of the city and State are co-operating with the Chamber in all matters pertaining to the public good, and our policy has and will be to go before the public with a

united front on public matters, as we believe more can be accomplished by co-operation than by individual effort.

The Nicaragua Canal, a measure that the Chamber has urged for the last ten years, is about to become an accomplished act, as a bill has already passed the House and without doubt will pass the Senate, and once more the Chamber can congratulate itself on helping to carry through a measure of such importance to the Pacific Coast.

The importance of our new fuel product—petroleum—cannot be too highly estimated, as the output has more than doubled during the past year.

We do not overlook the importance of our merchant marine, and continue to urge Congress to pass measures that will place the Stars and Stripes in the foremost rank in the world.

Never in the history of the Chamber has our membership shown such a large increase as during the past year, and we stand today with over 625 members in the foremost ranks of the commercial organizations. We have gained in membership during the year over 170 members.

I desire to call the attention of our members to our Standing Committee, especially to the Committee on Arbitration, as this was formed for the settlement of difficulties among the members and others, and I am sure we would find it greatly to our advantage in referring matters to it rather than resorting to other measures. We also have a Committee on Appeal, so that if the decision of the Arbitration Committee is not satisfactory the matter can be appealed. And this year we will add a Committee on Reception and Entertainment.

The Transpacific Cable for which we have so earnestly labored, is about to become an accomplished fact, as we hope that within the next year to be in communication by cable with the far east.

The business of the year of our city and State, as shown by our statistics, has been improved by leaps and bounds. Our savings banks are overcrowded with money, and loans have been made as low as $5\frac{3}{4}$ per cent. gross, the lowest rate ever known in this city. Our city has 17 commercial banks, with resources of over \$87,000,-000 and deposits aggregating over \$50,000,000. We have also nine

savings banks, with resources of over \$139,000,000 and deposits aggregating \$128,000,000. Our banks gained \$20,000,000 in resources during the year. The bank clearances for 1901 were over \$1,000,000,000, an increase over 1900 of about \$149,000,000. The month of October was the banner month, showing clearance of over \$118,000,000. The clearance for December 31st, 1901, was \$7,000,000, the greatest for any one day on record. These figures do not include the five National banks in San Francisco.

The State has 42 National banks, with resources of over \$75,000,000. Five of these banks are in San Francisco, and represent nearly one-half of this total. The city savings banks have increased their deposits some \$9,000,000 during the year. The total amount of dividends paid out by corporations listed on the San Francisco Stock and Bond Exchange were \$11,675,359. The U. S. Custom collections for the year were over \$600,000 per month. The total exports of merchandise by sea was over \$40,000,000, and the total imports of merchandise by sea for the year were over \$36,000,000, showing an excess of our exports over our imports of over \$4,000,000. Our Hawaiian trade amounts to over \$1,000,000 per month, and if it was included in the statistics of the port, as in former years, it would make a larger showing for exports of the port than any in the history of the city.

October seems to have been the most prosperous month, as the export business for that month amounted to nearly \$6,000,000.

Two hundred and one grain cargoes were cleared during the year. Real estate to the value of \$29,000,000 has changed hands during the year. The assessed valuation of real estate and improvements in San Francisco is over \$289,000,000. The assessed valuation of personal property is \$85,000,000. The total assessed valuation of all kinds of property in San Francisco in 1901 was \$413,338,420. The total indebtedness of the City and County of San Francisco was \$250,000. For many years Great Britain has been our best customer for wheat, and still continues, as she has taken 7,000,000 centals during the year. Our products still continue to increase in value. The gold production for the year was over \$15,000,000—silver over \$1,000,000. Our wheat crop amounted to over 30,000,000 bushels, valued at something over \$18,000,000. Our barley

crops exceeded 20,000,000 bushels, and were valued at over \$7,500,000. The salmon pack of the Pacific Coast was the largest on record, being 5,044,000 cases. Dairy products of the State were large and exceeded in valuation some \$15,000,000. The wool clip for the year exceeded 15,000,000 pounds. The deciduous fruit shipped east by rail exceeds 6000 carloads. The orange crop, being another of the largest crops for many years, exceeded 21,000 cars. The lemon crop amounted to about 3000 cars. The State has over 29,000,000 fruit trees, about two-thirds of which are in full bearing. The greatest portion of these trees—some 20,000,000—are in the northern part of the State. Our bean crop has also been very successful, amounting to 54,000,000 pounds. The raisin crop amounted to 72,000,000 pounds. The prune crop amounted to 70,000,000 pounds. Our wines and brandies amounted to about 18,000,000 gallons. The fuel oil production showed nine million barrels. The sugar production is 80,000 tons, and as for walnuts, peaches, apricots, apples, pears, plums, figs, hops and other products, I will refer you to our compiled statistics, which have been prepared with great accuracy.

I regret to state that we have lost by death the following members: John D. Fry, February 3; Charles Fox Tay, February 8; Adolph Bissinger, February 17; James B. Chase, February 22; Simeon Wenban, March 4; Herman J. Sadler, April 14; Jacob G. Jackson, April 17; Peter Dean, May 25; Joseph Britton, July 18; George F. Hooper, August 11; Stewert Menzies, September 25; J. W. Allyne, December 4; Samuel Feder, December 29.

And now, in closing, I beg to again remind the members that the Trustees are here for work and will be very glad to receive any suggestions from the members of the Chamber in all matters pertaining to the commerce of the port of San Francisco.

Thanking you for re-electing me to the office of President of the Chamber and also expressing our thanks to the members of the California Delegation in Congress for their many courtesies shown to us, and not forgetting the support given us by the press, I close this, my Annual Report.

GEO. A. NEWHALL, President.

SAN FRANCISCO'S HISTORY

San Francisco, or as it is sometimes called, the Golden City, is not only the metropolis of California, but also of the whole Pacific Coast and will in time occupy the same position with regard to the Western half of the continent, leaving to New York the empire of the East. Its location on the map is 37 deg. 47 min. 22 sec. north latitude, and 122 deg. 25 min. 40 sec. west longitude, and as far as climate is concerned occupies one of the finest positions on the globe. Like many other seats of commerce and empire it may be called a seven hilled city. It has one of the best harbors in the world. The Golden Gate—as such well named—forms a magnificent approach to this fair city, as it is about five miles long by one wide, with a picturesque, if rugged, coast on either hand. The bay, one of the finest in the world, extends forty miles south of the city, and with its sinuosities reaches twenty-five miles to the northward, affording a wealth of beautiful and picturesque scenery on either hand—some of it, especially around San Pablo Bay, reminding one of mingled lake and mountain scenery, as here the hills appear from a distance to come to the water's edge. The muddy currents of the Sacramento and San Joaquin, however, at times mar the general effect which, nevertheless, is always striking and often grand. The average width of the bay is about eight miles, while its shore line is over three hundred miles in length. The depth of water varies from sixty to one hundred feet. It contains three islands: Angel Island, Alcatraz Island and Goat Island, each a Government reservation. Goat Island, opposite the business part of the city, is about half a mile square. Angel Island, which is hilly, contains about eight hundred acres. Alcatraz, which has a fort of the same name commanding the Golden Gate, has an area of about thirty acres. Many of the most important communities in California, such as San Francisco, San Jose, Oakland, Alameda, Petaluma, Vallejo and others, are on or near its shores. It has been compared for beauty with the far famed Bay of Naples. Thus for a noble situation, San Francisco is unequalled, and with lake-like bay and ocean, the Mission mountains within its borders and the many

high hills on which the residence portion of the city is built, has unsurpassed panoramic features. The numerous cable and electric roads afford an endless variety of views, all picturesque, some grand and imposing in the extreme. Sunrise over the distant hills of Contra Costa, and sunset on the western sea, have a thousand charms, while the witchery of moonlight on the bay and the distant ocean, and the shimmering pathway of the beautiful orb of night can nowhere be observed to greater advantage than on our own widely extended waters. Pleasant and picturesque suburbs are within easy hail—the most distant of them being accessible by rail and steam in thirty-seven minutes. Such are Oakland, Alameda, Berkeley, Sausalito, San Rafael, Fruit Vale, Menlo Park, Belmont, San Mateo and Redwood City.

The average temperature is usually delightful, no great extremes of heat or cold. It is much more highly favored than almost any other portion of the State. Summer heats do not enervate, and there is no such thing as excessive winter cold. Snow has made its appearance in our streets but twice in a score of years. The temperature until Christmas is generally most delightful. After that it becomes bracing, but it would be regarded as pleasant in the East. The average temperature of January is 49.3, and that of July 58.8 Fahr. From November until April is what is called the rainy season, but no continuous rains fall. Flowers bloom in the city gardens all the year. The only drawback is the summer fogs, but as these are usually cleared off by an early hour in the day, they can hardly be regarded as inconvenient. Part of the city is entirely free from them. Trade winds prevail during the Summer and Fall, the result of which is one of the healthiest cities in the world. There are no tornadoes, no hurricanes, no thunder storms, a feeble electrical display once or twice every couple of years being the best that San Francisco can afford in that direction.

San Francisco is situated on a peninsula between its noble bay and the ocean. Surrounded on three sides by water, set in a frame of mountains, the peninsula itself intersected by picturesque summits and hills of moderate elevation, it presents a series of ever changing views, some grand, many beautiful, all fit subjects for the painter's brush or the poet's pen. Spring is probably the proper

season in which to see them and appreciate their beauties, as clothed in a mantle of green, they are then at their best. There are a hundred vantage points for the lover of natural beauty to choose. Beyond what is known as the Western Addition, the aristocratic portion of the city, a range of heights crowns the gradually ascending slopes and overhangs the inlet that forms the entrance to the harbor and the shore line southeast from it. North and east, beneath the feet almost, extend the placid waters of San Francisco Bay. East and by south, to use a nautical phrase, the prospect is interrupted by hills within the urban limit. Southeast again appear the shining waters of the bay, extending afar off to the horizon. West and southwest, looking toward China and Japan and the tropical islands of the Malaysian Archipalego, and extending to the far horizon where sea and sky commingling meet, are the waters of the blue Pacific. The hills of Marin County, with Mount Tamalpais proudly raising its head over all, close in the prospect to the north. To the northeast the waters of the bay are continued to those of San Pablo Bay, one of its wide-reaching arms, which, however, is invisible. The hills of Contra Costa and Alameda form the eastern horizon. South are Bernal Heights, with the hills of San Mateo rising behind them and the summits of the Coast Range closing out the view. In the southwest the Twin Peaks of the Mission mountains directly overhang one of the most thickly populated sections of the city. Within the metes and bounds here noted, the residence portion of San Francisco is found. In Spring verdure crowned heights everywhere meet the eye, while over all the radiance of a semi-tropical sun adds its witching charm. The bay presents an animated scene, steamers crossing and recrossing, entering and leaving coasters with lumber and white-winged vessels from many lands. English, American, Italian and German ships anchored and waiting for charter, tugs darting hither and thither, small boats and pleasure yachts, all bespeak the presence of what is fast becoming one of the greatest cities of the world and one of the leading seats of empire.

From these points of view, however, the active business life of San Francisco cannot be seen, for this is a city of magnificent distances, even in its infancy, one to which New York, cribbed, cab-



EUGENE E. SCHMITZ
MAYOR OF SAN FRANCISCO

ined and confined within the narrow limits of Manhattan, cannot for a moment be compared. To note the great heart of San Francisco throbbing and instinct with life and its business arteries pulsating with a steady stream of humanity ceaseless in its flow, we must transport ourselves to another of the heights of the seven-hilled city of the West. From those—from the turret of one of the enchanting residences of our millionaires, or from the towering heights of Telegraph Hill—a coup d'oeil can be obtained which it were hard elsewhere to equal. Here the commercial life of the city flows all around and beneath like the ocean tides round some rocky promontory. Market street, the great central artery, is black with an ever-moving throng. Kearny street, the principal retail avenue of the city, is gay with richly-dressed ladies and with sight-seers. Montgomery and Pine Streets overflow with the speculative throng. And then from Telegraph Hill to Mission Bay, like the squares on a checker-board, stretch block after block devoted to commerce, law and manufactures, all with their intersecting streets filled with crowds of soberly dressed business men, eager speculators, artisans and workers that hail from all lands. Here the active Yankee jostles the indolent native of Spanish America, whose motto is ever manana (the everlasting to-morrow), the sanguine Irishman, the sober Englishman, the staid, contented-looking German, the heathen Chinee, and a score of other peoples and nations and tongues, who all mingle in the same perennial stream of humanity. Not the least among these mighty arteries of trade and finance is California street, named after the State, its first born, its representative mart, and the one most characteristic of its people. From the same point from which all this is presented to the view scores of deep-water vessels of all nations may be seen at the wharves discharging or in the stream waiting for their turn, and steamers crossing and recrossing to Oakland and Alameda, which, over the bright waters look like Venice as seen from the Adriatic. The island of Alcatraz, with its fortifications, Angel Island and Yerba Buena or Goat Island serve to break up the bay into so many smaller inlets and add to charm to the whole. There are other points of vantage from which most glorious views of city, the bay, and the broad Pacific may be had, such as the Mission

Peaks, Russian Hill and Bernal Heights, but from none of them is the whole city visible. Here is ample room for an imperial metropolis, with its miles and miles of houses and business streets and wharves and its residence and manufacturing quarters, equaling the greatest city on earth. As yet it is only sparsely settled, though its houses are scattered over all this broad space, clustering more thickly in certain quarters. A population of at least three hundred and sixty thousand souls dwell within its borders. A little over a hundred years ago there was no city and no settlement. Half of the area noted was nothing but a bare sandy peninsula, the sand continually driven in from the ocean, drifting over its surface, leaving only the tops of the high ridges bare, kept so by the strong westerly breezes. Where the business portion of the city now is, was then a sequestered cove, or bay, over which the hills rose sharply to the sky. A few Indian settlements were found here and there, the occupants next to the savages that roam the great solitudes of South America, the lowest on earth. They may have been happy, but so far as outward appearance went there was nothing stirring or romantic in their lives, and they were incapable of appreciating the beauties by which they were surrounded. They had remained for untold ages in their ignorance, possessing no more of aught having human interest than the Paleozoic man of geology, and they have now passed away forever. Yet it was an effort to bring them within the Christian fold and make of them a civilized and Christian people that gave birth to the little settlement that preceded in order of time the present flourishing city.

There is no record of who first discovered the Bay of San Francisco or when, but it was known by that name before the close of the sixteenth century, and while Elizabeth was still on the throne of England and Philip II on that of Spain, and it was always known as the Bay of San Francisco. And now a century and three-quarters elapsed ere it was again, as far as is recorded, seen by white men.

THE MISSION FOUNDED.

The Jesuits had been driven from New Spain and its domains, and the Franciscan monks were appointed to fill their places. Father

Junipero Serra was at the head of those destined for California. There were two great missions to be supplied, one at San Diego and the other at Monterey. But the latter, or rather the bay on which it was located, could not be found. Palou, the biographer of Serra, attributes this to a divine interposition so that they should continue their course till they arrived at the harbor of San Francisco, because when Father Junipero was consulting with the Inspector-General about the first three missions, seeing the names and the patrons which he had assigned to them, said to him: "Senor, and is there mission for our father (St. Francis)?" To which Galves replied: "If our father deserves a mission let him see that his port is found and it will be placed there." Fathers Juan Crespi and Portales not finding Monterey Bay, or rather not recognizing it, they passed up to the coast and on the 7th day of November, 1769, after a weary journey over rugged hills, terminated by a march over sand dunes, they reached the Golden Gate. Friar Crespi, who is credited with the honor of the rediscovery first as far as known, located the Bay of San Francisco about one hundred and thirty-three years ago, and nearly seven years prior to the Declaration of Independence. How little did he dream that he had discovered a new seat of empire for those who were even then planning to establish one in the colony of Massachusetts Bay. But it was even so. It was not, however, till the year of the Declaration of Independence, and just eleven days before that declaration was promulgated to the world, that the settlement was established. Two years previously Friar Palou, the biographer already noted, again saw the bay, and his representations caused the fitting out of an expedition to establish a colony and a mission. Lieutenant Ayala surveyed the bay in August 1775, and reported it was not an harbor, but a multitude of harbors, in which all the fleets of Spain could play hide and seek. Spain had then a great navy, but the asseveration was literally true, as all the navies of the world at the present day could, too play hide and seek in it. On the 23d of March, 1776, another expedition selected the site of the mission and of the Presidio or fort, both still known by the same names. The site of the fort, which was surrounded by a wall twelve feet high, was near the Golden Gate, and is now the United States military headquarters in San Fran-

cisco. The Mission, the church of which, hoary with more than a century of years, still stands, was at the head of a fresh water lagoon, fed by the springs of the Mission mountains, which springs have long since disappeared.

Palou says that Portala, commander of the expedition, traveling from the southward along the shore of the bay, came to the cove of Llorones (or Cry-Babies) and crossed a creek which is the outlet of a large lagoon, called the Lagoon of Dolores, and this appeared to him a good site for a mission. The first settlers in San Francisco reached the spot on the day previously noted. They consisted of seven civilians and their families, likewise seventeen dragoons and their families, under the leadership of Friars Palou and Cambon, the soldiers being under the command of Don Jose Moraga. The foundation of the settlement was made amidst great rejoicing. Friar Palou celebrated mass and raised the cross while Moraga took possession in the name of the King of Spain amidst salutes by land and sea. The next day the Mission of San Francisco was dedicated in like manner and the city's history began. The civilization and Christianization of the Indians was at once taken in hand. It was, however, slow work, and then rough and crude, but it was a wonderful advance over their previous condition.

At sunrise all living in the Mission had to rise and attend mass. Breakfast being partaken of, the men and unmarried women had to go to work until eleven o'clock. There was then a respite of three hours, after which they worked again until sunset. They were taught all sorts of trades necessary in the settlement. The first work done was the erection of the church, which is said to have taken seven years. At that time there were two hundred and sixty Christianized Indians at the Mission. They increased gradually till 1813, when they numbered one thousand two hundred and five. The settlement of whites from Mexico and old Spain, the political revolution, by which the Mexicans then cast off the Spanish yoke, and other causes, diminished their number till 1823, and ten years later there were only a few left. The secularization of the mission did its work, too, and now there are no Indians on the peninsula of San Francisco. Many of the whites married Indian women, and have left a handsome, sturdy, prolific race behind

them, but they, too, are few in numbers. There was a slow, a very slow, increase in the civil population of San Francisco. Gradually the lands became divided up among the Spanish and Mexican grantees. These raised vast herds of cattle, whose hides and tallow they sold yearly to small vessels visiting the bay for the equivalent of five dollars each per head of stock in American money. Good wines were made from grapes grown in the valleys of Santa Clara and Sonoma. Now, though both Mission and Presidio are within the limits of San Francisco, the Mission, one of its most thickly populated sections, neither was the center from which it sprang. The Presidio had a population of perhaps three hundred soldiers while the Mission had perhaps two thousand people—Indians, etc. At this time dealing in furs and poultry was a very profitable occupation. Elk were so plentiful that they swam in herds from the main land to Mare Island. Sea otter, three to six feet in length, and selling from forty to fifty dollars each, swarmed in the waters of the bay. They were sold to Boston ships. Beaver skins from the Sacramento and San Joaquin Valleys were plentiful. The goods for which the hides, pelts, tallow, etc., were exchanged were tea, coffee, sugar, clothing and blankets for the Indians. Then there were blankets made at the Mission from the wool of the sheep kept there and known as Mission blankets.

YERBA BUENA.

The first house was built upon the slope of the hill above the quiet little cove of Yerba Buena, on the line of what is known as Dupont street, in the summer of 1835, by one William A. Richardson, an Englishman, who had dwelt twenty years in the country. Reckoning from this time, San Francisco has had somewhat over half a century of history. Mr. Richardson was a dealer in hides and tallow, and his home was the headquarters of the trade around the bay. A very humble origin it was for commercial San Francisco, whose merchandise is found in every land and the sails of whose ships whiten every sea. Contemporaneously with Mr. Richardson dwelt here John Reed and Timothy Murphy, natives of Ireland, and James Black, an Englishman.

Meanwhile some slight measure of progress was made in the Mis-

sion Dolores, and an Alcalde, J. J. Estudillo, was elected, with power to grant lots to settlers. The pueblo, or settlement, was, as in California towns, four leagues square. In 1834 an ayuntamiento, or town council, was formed, consisting of an Alcalde, Regidores and a syndic, which first met at the Presidio, afterwards at the Mission. Richardson was reinforced by Jacob Leese, an American from Los Angeles, who entered into the same business as the earlier pioneer. Yerba Buena, so called from an herb-like mint that grew plentifully on the hills, now gradually assumed some commercial importance. Whalers put in to get supplies, and Russian vessels from Sitka purchased wheat and other necessaries from the Mission and pueblos to the extent of about forty thousand dollars per annum in value. Jacob Leese arrived in Yerba Buena July 1st, and on July 4th, with the help of the captains of the whalers, sailors, native ranchers, and others, a hundred guests in all celebrated the day in good style in the embryo city. In 1837 the first frame house was erected, on the spot now occupied by the corner of Commercial and Montgomery streets. In April 1838, the first white child, a girl, was born here.

For many years there was very little to note in Yerba Buena's history. The first house for long remained solitary and alone on the hillside overlooking the bay. The trade invited a few merchants who grew rich by a profitable trade in these commodities. Among these were Mr. Richardson, already noted, William Heath Davis, and, in 1838, Nathaniel Spear and William S. Hinckley. Mr. Spear was the first to catch and can salmon on the Sacramento. Messrs. Spear and Hinckley first settled in Yerba Buena in 1838. In 1839 Captain Sutter arrived at the little village in the "Clementine." He had with him a number of Swiss and Hawaiians. With William Heath Davis he started up the Sacramento and established the first settlement in that valley. In 1840, when all the foreigners in the city were arrested by order of the Mexican government, there were only twenty-five of them all told. In 1840 Nathaniel Spear established his headquarters on the corner of Montgomery and Clay streets. In 1841, the Hudson Bay Company, as already stated, erected a warehouse. John J. Bloget, one of these early business men, had an establishment which was made use of as a

sort of commercial exchange or headquarters. The Hudson Bay Company sold out to Howard and Mellus. Both were pioneer merchants. Mr. Howard, after whom Howard street was named, may be called one of the founders of San Francisco. Francisco Guerrero, who was murdered in 1851, is entitled to the same honor. Guerrero street has been named after him. The house of Paty, McKinley & Co., once noted here, was established in 1843.

There was, of course, no comparison between the price of real estate then and now. In 1835 lots were sold at about 25 cents per vara—331 inches—on Clay, Montgomery, Kearny, Dupont, Washington, Jackson, Broadway and Pacific streets. Montgomery street, in the early days, was on the water front. In 1845 a fifty-vara lot would sell for \$12.50 on Montgomery, Market or Bush, these being considered the best locations. The land, however, was in the nature of a grant, as the purchaser was required to fence the lot and build a house on it within a year, or his title would be forfeited. Lots as far as the Chronicle building, that now command from \$3,000 to \$4,000 per front foot—fifty-vara lots were sold at this figure. The final location of the city of Yerba Buena was determined because the anchorage in front of the Presidio was unsuitable. The exact adoption of Yerba Buena as a proper place for shipping, was, however, only after North Beach had been tried without the desired result.

The Alcaldes of the Mission settlement during the ensuing nine years made eighty-three grants of land in Yerba Buena, of which forty-nine were to Americans or Englishmen. Thus even before the American occupation Yerba Buena or San Francisco, was to all intents and purposes an American town. The first mill, a grist mill, was erected here in 1839. It arrived on the "Corsair." It was put up on the north side of Clay street between Kearny and Montgomery. It was worked by six mules and made from twenty to twenty-five sacks of flour each day. In 1840 the Hudson Bay Company established a depot at Yerba Buena and soon drove the Americans out of the hides, tallow and other trades. Its supremacy was, however, temporary only, for in 1844 it disappeared from the scene. In the same year the number of houses was only fifteen. About this time Captain Paty started a line of packets between

San Francisco and Honolulu. In this year the first steamer was seen at San Francisco. It was built by the Russians at Sitka in what is now Alaska, and towed to Bodega River. Civilized man has been on these shores over sixty-seven years, an infiltration of American blood has made its presence felt, and we are rapidly approaching 1848, the year of gold and revolution, and in California also the area of the Argonauts. Many nations had long looked on the wonderful land with a longing eye. Years before the Russians had a settlement at Russian River, north of the Bay of San Francisco, which they afterwards abandoned. In the United States it was only looked upon as a question of time when there should be added to its domain the fairest region of the new world. A steady stream of emigrants, principally from Missouri, but from all the States and from all nations, poured into California for the next four years. Between this time and the annexation of the country to the United States. Fremont led an expedition into it which bore a hostile attitude toward the Mexicans, while the "Bear Flag" party revolted and proceeded to declare the independence of the country.

AN AMERICAN CITY.

On the 7th of June, 1846, Commodore Sloat heard of the war with Mexico, and on July 23d, arriving at Monterey, took possession in the name of the United States. The American flag was hoisted at Yerba Buena by Captain Montgomery of the "Portsmouth" in the same month. For two years a desultory war followed, but San Francisco was beyond its reach. Yerba Buena, as it was still called, had been mainly American in population and soon became the center of American activity in California and from that time grew rapidly in importance. The Mexican Alcade at the Mission Dolores was set aside and Washington A. Bartlett, a lieutenant on the "Portsmouth," was appointed in his stead, and, as remarks a writer of the history of San Francisco, "undertook to administer Mexican law as interpreted by American whims." Soon after the occupation the advent of a strange vessel full of people caused great excitement in the town. It was not an enemy, but was found to be the "Brooklyn" with two hundred and thirty-eight emigrants, principally Mormons, who had come here to set up a

State of their own under the shadow of the American flag. Great was their dismay to find that the flag of Mexico had floated here for the last time. Sam Brannan was their leader. He had published a Mormon sheet in New York and had brought presses and type with him to set up again the standard of Mormonism in the wilderness. Most of the men had to enlist in the service of the United States and all settled for a time in Yerba Buena, which was, for a while at least, a preponderatingly Mormon settlement. On the 9th of January, 1847, Brannan commenced the publication of the California Star, a weekly paper, and the *avant courier* of journalism on the Pacific Coast. In the same month the name of Yerba Buena, now applied to an island in the harbor, was dropped, and by a decree of Alcalde that of San Francisco substituted. In March of the same year Stevenson's regiment of volunteers arrived from New York and added still more to the population and wealth of the embryo metropolis. In April of this year the town boasted seventy-nine buildings, of which forty-three were frame and thirty-six adobe.

General Kearney in the same month issued a decree granting to the public all the beach and water lots between Clark's Point and Rincon Point, to be sold for the benefit of the country. Alcalde Bryant, after whom Bryant street has been called, had them surveyed by Jasper O'Farrell, an Irish surveyor. O'Farrell street bears his name. In July half of them were sold at rates ranging from \$50 to \$600 each. A census was taken in the same month, disclosing the fact that the population was 459, half American citizens, the rest being Hispano-Californians, Indians and Kanakas. And now came the time when California was to be opened wide to all the world and San Francisco as her commercial metropolis was to take rank among the great cities of the earth. This was the era of the discovery of gold in California, which was to revolutionize the financial world. The story of its discovery at Coloma, on January 19th, by James W. Marshall, is a twice-told tale. The news traveled slowly. Some gold had been found in California before, and the mission fathers knew that the Sacramento Valley was one of the most promising locations. Indians digging up roots for food were the first discoverers, and picking up a few pieces in a mill-race

was not likely to attract a great deal of attention. It was not till February that the tidings of the discovery reached San Francisco, and not until six weeks later did the Star, the solitary California representative of the press, take any particular notice of it. Towards the beginning of April the editor of that paper, with a few others, visited the scene of the discovery, came back, and declared the whole thing a sham. Almost at the very date of this pronouncement half a pound of gold dust was offered for sale in the new city and brought eight dollars an ounce. Still gold continued to be taken out of the earth and one after another went to the diggings to see for themselves. They found the shining metal and soon the embryo city was emptied of its inhabitants. In March there were eight hundred living in two hundred houses, and in April the first public school was opened. By the middle of June the Star had no readers, and all of its employees, from the editor to the devil, having gone to the diggings, it incontinently suspended. As it said, "The whole country resounded with the cry—

'GOLD! GOLD!'"

But slow as it was in making an impression in San Francisco it made this up by the rapidity with which it spread to the outer world. On the wings of the wind it spread to the ends of the earth. The immediate result was the almost total abandonment of San Francisco. Town lots were offered for little or nothing; but soon her fortune hanged. Gold hunters had to live and San Francisco was the only avenue of communication with the outer world. Soon land became valuable enough. It was not long till most of the population of California was centered at the mines. In the Fall they came trooping from Oregon and the Hawaiian Islands. Few or none remained in Yerba Buena. The first American lady arrived here in the American brig "Eagle" February 2d of this year. October brought gold seekers from Mexico, Peru and Chile. Two millions of dollars, the first fruits of the mines, were exported in 1848. The Baltimore Sun of September 20th published the news and by the close of that year the exodus had begun. It is a curious commentary on the changes that have occurred everywhere since that news which would now be flashed around the world in a single

day then took a year to travel from the Pacific to the Atlantic. A million dollars worth of goods were imported this year. January, 1849, saw ninety vessels with 8,000 men from Eastern cities all bound for San Francisco, thence for the gold fields. Gold dust, sixteen dollars an ounce, was the currency of San Francisco.

The Collector of the Port on November 13, 1849, wrote to Washington: "I am astounded at the amount of business done at this office. Six hundred and ninety-seven vessels arrived within seven and a half months."

At this time board without room was five dollars per day. A small room rented for one hundred and fifty dollars. Wood cost four dollars a cord, flour forty dollars a barrel, pork sixty dollars a barrel. For lack of storage room nineteen vessels were employed as warehouses. At the same time beef sold at seventy-five cents and one dollar per pound. In this year thousands of cattle fed on the Alameda hills and men in small boats went over and killed them at night.

The Golden City in 1849 attained a population of sixteen thousand. Its citizens were coining gold in their several avocations. Laborers earned part of the time sixteen dollars a day, during the rest of the year eight dollars a day. The first brick building erected was in September, 1849, by W. H. Davis. It was on the southwest corner of Montgomery and California streets, and was leased to the Government for a custom house at \$3,000 per month. It was destroyed in the great fire of May, 1851. A great fire in December almost swept the new city out of existence. During that year San Francisco gave still further promise of its importance as a seaport, for not less than five hundred and forty-nine vessels, winged messengers of the sea, arrived in the harbor, that previously but for an occasional whaler or vessel to carry away hides and tallow was almost unfurrowed by a keel and as lonely as a lake in the mountains. The same year forty-one thousand people arrived overland and the population of California increased to one hundred thousand mostly employed at the mines. The need for wharfage accommodations became urgent at San Francisco, and what was known as Long Wharf was built extending out eight hundred feet into the bay to what is now known as Front street. The wharf known as Central

Wharf was located where Commercial street is now. It started a little to the west of Sansome and ran 400 feet into the bay. Subsequently an extension was made to Davis street and finally to Drumm. The first section cost \$110,000, the second, \$200,000. C. V. Gillespie was President and William Heath Davis, Treasurer. From eight to nine hundred vessels from every part of the globe, between Clarke's Point (Broadway street) and Rincon (Harrison street) were anchored east of it, presenting such a sight as the world probably never saw before or since.

Where once this wharf was is now dry land and far beyond it. The pioneer of ocean steamships, the "California" arrived February 28th of this year, having R. F. Smith, the Collector of Customs, aboard. In March the steamship "Oregon" came to hand from New York with three hundred and fifty passengers. On August 15th the first Protestant church was dedicated. It belonged to the First Baptist Society. In October steamers began to make regular trips on the Sacramento. A little steamboat was brought out in sections from Boston. Front street tells the first advance of the city on the bay, but now Front street itself is far from the waters, which have been encroached on to the extent of three quarters of a mile. Here business block after business block extends, and California street, the first part of it reclaimed from the bay, is built up wherein early days deep-water vessels rode proudly at anchor. This portion is now devoted to commerce, finance and manufactures, and will always be the section devoted to commercial and financial operations. We have now brought the story of our city down to the period when it emerged from the dim twilight of the Hispano-Mexican period into the daylight of modern civilization, and became known of all lands and all men.

In 1850 San Francisco exported gold worth \$26,000,000. Its population was 30,000. Two great conflagrations, each involving the loss of millions, took place that year. In 1851, in May, came the great fire which destroyed property worth \$7,000,000. The burned district was three-quarters of a mile long, and at one time presented the appalling spectacle of almost a mile of flames fanned by a high wind. But misfortunes never come alone. Another great fire came in June and the people began to think of removing

from the unfortunate city. They, however, took the sober second thought and remained. There were no more really great fires, and our city continued to advance steadily in population and importance despite the fact that in little more than a year fifteen millions of property had become the prey of the devouring flames. The first Directory was now published. In 1853 the San Francisco Gas Company was laying pipes and building its works. It is not necessary to trace the city's growth historically much further. In 1860 the population had grown to 56,802, and in 1870 to 149,473, in 1880 it reached 233,950, and is to day, although the census figures are smaller, reckoned at 360,000. Several thousand new blocks and houses have been built within its precincts during the past six years, and through dull times as well as those of activity the movement has never slackened. The system of cable roads, which was first placed at the service of civilization in this city in 1872, has greatly conducted in this steady and remarkable growth. By it the more remote portions of the peninsula on which the city is built were easily rendered accessible. It became possible to travel two to three miles from the commercial center of the city in twenty minutes to half an hour, and new streets were opened, while new blocks of buildings sprung up as if by magic. There is now a network of electric and cable lines in San Francisco and many more are projected. The gold and silver of the coast has been lavishly spent in building up the city and in providing the fortunes of its millionaires. The combined product of both precious metals has reached an amount estimated at two and a quarter billion of dollars, most of the profits on which have been contributed to enrich San Francisco. It has been the great heart and center of silver mining no less than that of gold, and the silver era was in its way of as romantic interest and of great practical results as that of gold. In 1863 shares in the silver mines of the Comstock were at fabulous prices, from one thousand dollars each in Chollar to six thousand three hundred dollars in Gould & Curry. In 1869 some ore at White Pine yielded ten thousand dollars a ton. In 1874 the Crown Point and Belcher mines were in the heyday of their glory. In three years they had yielded forty millions of dollars, but a much greater mine was to eclipse them and to remain to the pres-

ent, as far as is known, the greatest heard of in history or even in tradition. There have been mines in Mexico and Bolivia, the grand aggregate of which was larger but none that yielded such amazing results in such a short space of time. In May, 1874, it gave dividends of \$300,000 per month. Being examined by experts it was declared that the ore body in sight was worth a billion and a half dollars. Under the stimulus given by this the value of the shares in the mines in the San Francisco market advanced a million dollars a day for about two months. This mine was next divided into two, the Consolidated Virginia and the California, with over half a million shares in each. They were owned principally by Flood, O'Brien, Mackay and Fair, whose names have become renowned throughout the earth for their riches. For two years a steady stream of wealth from the mines flowed into San Francisco to the extent of over one hundred and twelve million dollars. The Stock Exchange became a recognized institution and thousands were, some of them in a day, elevated from poverty to wealth. The picture has had a reverse side, and shares during the past few years have sold as low as half a dollar each. Such are the fluctuations of mining stocks; but whatever fate betide particular industries, San Francisco does not cease to progress.

Her capitalists are making vast combinations of capital to develop the great industries of the State.

CALIFORNIA IRON AND IRON INDUSTRIES.

Upon the development of her iron deposits will depend the future greatness of California commerce. California has within her borders some of the best iron in the world. The ores of Shasta, Placer and Madera especially cannot be surpassed, but difficulties as to transportation and fuel have always prevented their utilizations to any extent. Years ago the iron of Clipper Gap, Placer County, had a prominent place in this market and some of the capitalists of our earlier days such as A. P. Hotaling and others put a good deal of money into the business. But the causes just mentioned prevented the permanent utilization of the deposits and the attempt resulted in loss to all concerned. Since that time iron from California ores

has been utilized occasionally as by the Pacific Rolling Mills in some of the work on the New City Hall. But the matter has attracted the attention of prominent Pacific Coast and Eastern capitalists during the past few years and many propositions for the exploitation of our iron ores and their conversion into iron and steel have been considered. In 1900, there were hundreds of locations made in Shasta which were all bought by parties supposed to represent a great Eastern combination. And from what has happened in copper we know that it only requires capital and energy to develop the resources of these counties properly.

The steadily increasing use of iron through the ages has marked the progressive advance of civilization and to-day the iron industry leads every other. Upon the development of her iron resources depends California's progress and with it she will command the wealth and commerce of the Pacific and assert her mastery over its destinies. Decidedly the finest iron ore yet discovered in America is that found in the seven peaks of the Minarets in the East of Madera County. It has assayed 94 per cent magnetic iron and none of it has gone below 64 per cent, which is the highest of Lake Superior ore. It was discovered in 1892. The peaks are in places a complete mass of almost pure iron and it is claimed that there is practically no limit to the quantity that can be obtained. A company with a large capital has been formed to work the property, the title to which has been already acquired. Surveys for a railroad have been completed and every preparation made to bring the product to San Francisco Bay and start one of the greatest steel plants in the world. The location of this will probably be at Oakland so that its products can be distributed over every part of the Pacific Coast by rail and by sea to every county bordering on the Pacific Ocean.

THE NICARAGUA CANAL.

Almost ever since Balboa discovered the Pacific Ocean the project of a canal to obviate the necessity of making a long detour north or south, has been the grand desire of navigators. Indeed America was discovered in the attempt to find a short passage to, the Indies and the existence of the great continent stretching north

and south, how far no one could tell, gave rise to considerable disappointment in the minds of those more immediately interested. The discovery of Peru with what was then deemed its illimitable wealth in gold and silver and the exploitation of the riches of Mexico for a time made people forget the importance of having a water way across the isthmus of Panama, but interest was not lost in the subject. Hence the attempts for several centuries to discover a northwest passage from western Europe to the Indies. The failure of these attempts directed the attention once more to Panama and a century ago the matter was brought to the notice of the Court of Spain, and was investigated by no less a personage than the renowned traveller, naturalist and geographer, Humboldt. The war of Revolutionary France and the efforts of Spanish-America to cast off the yoke of the old country caused the matter to be in a measure forgotten. But the success of de Lesseps in the construction of the Suez Canal led him to plan a similar canal—a sea level one to connect the two oceans by way of Panama. The failure of that project is now a matter of history. While the interest in the Panama Canal was at its highest, Captain W. L. Merry began to agitate the construction of a lock canal by way of the River San Juan and Lake Nicaragua. There was comparatively little attention paid to his efforts in the beginning but he possessed the gift of unflagging perseverance and when it became evident that the Panama Canal scheme was a failure, the Nicaragua plan gained in public favor until at last its construction became a matter of public policy. The construction of the Canal is now assured and without doubt nineteen hundred and eleven will see vessels pass through from the Atlantic to the Pacific. The cost of the canal may be given at two hundred million dollars. It will follow the course of the River San Juan as nearly as possible to Lake Nicaragua, and from that to Brito on the Pacific. It cuts the distance between New York and San Francisco in half; it lessens the voyage between New York and Liverpool and the Orient 11,038 miles and between these ports and San Francisco 10,000 miles. It will simply revolutionize the commerce of the world.

As regards San Francisco it will bring it so much nearer the world of commerce and civilization on both sides of the Atlantic.

It will not only reduce time and distance but also the cost of transportation and will make San Francisco and other Pacific ports by preference, ports of supply for all the Pacific Coast from the Rocky Mountains to the ocean for goods manufactured in the Atlantic States. Then our wheat, barley, fruits (canned and dried,) wool, wine, brandy, borax, and lumber can be carried cheaply to all points on the coasts of the Atlantic, and the Gulf of Mexico, including the western and southern coasts of Europe and all the coast of Africa. It will add at once two dollars and forty cents a ton to the price of wheat in this market.

The objection is frequently made that it will injure our manufacturers. This objection is unfounded, as they are exposed to as fierce a competition as they can possibly be and it will open a wider market for selling. It will lower the cost of transportation of such raw material as we would have to obtain from the Atlantic States or the south, pig iron and cotton, for instance.

President Newhall of the Chamber of Commerce says: "Shortly after the Spaniards acquired Nicaragua in 1542, an agitation began for artificial communication between the two oceans.

As early as 1529, Balboa took up the matter.

In 1534 Charles V sent an expedition out to report on the matter. The report was against it. Then, once more, in 1567, Philip II sent an expedition which made another adverse report.

Many other attempts were made to find a route for an artificial passage between the oceans. In 1579 Drake made his way to the Pacific Coast and in consequence of this the Spanish established trade on the San Juan River and via Lake Nicaragua.

In about 1655 the British Government took a hand in the matter.

From 1790 to 1804 Humboldt made many explorations and investigations of the various routes between the Atlantic and the Pacific.

About 1825 the United States Congress thought it their duty to see what they could do in the matter. Mr. Clay—also then Secretary of State, ordered an examination of the Nicaraguan Route.

In 1847 the British Government again attempted to control this route.

In 1840 Mr. Cornelius Vanderbilt and his associates received

a concession from the Nicaraguan Government, but by the interference of the British Government nothing was accomplished.

The voyage of the "Oregon" around Cape Horn was one of the most striking illustrations of the necessity of a canal, because, if the "Oregon" had only been able to get to the other side sooner, we in California, believe that with the aid of this wonderful fighting machine, built by our friends the Union Iron Works (whom I believe claim to be the only first-class builders in the world) the war with Spain would have been ended in a much shorter time and our various war heroes would not have had as many opportunities to try and discover who really did the fighting.

I would call your attention, to the fact that the distance from New York to San Francisco via Cape Horn is over 14,000 miles, and via the Nicaragua Canal, the distance between the same points would be something like 5,000 miles—a saving of some 9,000. Another very important distance which I wish to call your attention to is from New York to the Philippine Islands, which, via the Nicaragua Canal would be 11,700 miles and via the Suez Canal is some 11,500 or merely a difference of 200 miles."

OUR TRADE WITH THE ORIENT.

Owing to its situation, San Francisco is the natural entrepot of the trade of North and South America, with the Orient and also since the transcontinental railroads have bridged the continent, of that of Western Europe as well; that is to say, in the future much of that trade will pass this way. The trade of the Pacific is now estimated in round numbers at \$2,500,000,000 and is bound to increase largely in the future. Of most of this trade San Francisco must be the center. A great part of it will arise from the starting of industrial establishments on the shore of San Francisco Bay, a market for which will be found all over the countries on the shores of the Pacific. The population of these countries embraces at present, stated roughly, 500,000,000 or $\frac{1}{2}$ of the human race. Our share in the trade of the Orient has increased but slowly, but it has increased as the following table of exports will show:

	1873	1901
China	\$1,569,067	\$5,588,233
Japan.....	715,688	3,330,581
Philippines	64,440	939,185
East Indies.....		148,966
Korea ¹		60,206

The following table gives in detail the various ports, etc., in the East Indies where shipments were made last year :

Singapore	49,187
Columbo	5,360
Delhi.....	315
Bombay.....	4,661
Calcutta.....	15,873
Madras.....	1,843
Kurrachee.....	2,352
Rangoon.....	1,822
Mandalay.....	880
Batavia.....	14,600
Samarang.....	8,267
Sourabaya	8,022
Penang.....	9,948
Palembang	774
Padang	929
Borneo, not specified.....	181
Sumatra "	1,092
Medau.....	745
Oleleh	148
Benjarmassin.	51
Macao	81

RAILROADS IN CALIFORNIA.

The first railroad from San Francisco was built in 1863-4 between this city and San Jose by Peter Donahue. In 1855 a road was built from Sacramento to Folsom. This humble beginning was the foundation of the present magnificent system. The plan of the Central Pacific which with the Union Pacific, and its Eastern connections, has bridged the continent, was devised in Sacramento in 1859 by Leland Stanford, Collis P. Huntington, Charles Crocker and Mark Hopkins. These gentlemen put all their means into the new road and attracted sufficient capital to insure its completion. The idea of a transcontinental road did not originate with them but they

were the first to reduce theory to practice. The work of building the road was herculean and its proper financing in those days almost an impossibility, but they victoriously overcame all obstacles and the building of the road will always render their names imperishable. The road was completed on May 10th, 1869. The Southern Pacific was started in 1875 and completed to New Orleans, thus forming another link with the outside world. Branch roads were added from time to time and independent roads were built in the lumber districts and mining sections. Claus Spreckels built a competing road in the San Joaquin Valley which was subsequently purchased by the Santa Fe. Both systems were purchased by an Eastern syndicate after the death of C. P. Huntington and now form in conjunction with the Union Pacific and other roads, one of the great Railroad systems of the world. To the north of the Bay the California Northwestern Railway was originally started by Peter Donahue and the North Pacific Coast Railway by J. B. Stetson and his confreres. This latter has been purchased by an electric light syndicate and will, with perhaps the California Northwestern Railway, form one of the great systems of the State. During the past couple of years many short roads have been constructed in the oil sections of the state.

REPORTS OF RAILROAD COMPANIES FOR YEARS ENDING JUNE 30, 1901—

	miles
Southern Pacific Railroad Company of California.....	3,408.59
Central Pacific Railway Company.....	750.31
South Pacific Coast Railway Company.....	101.096
Southern California Railway Company.....	487.37
Santa Fe Pacific Railroad Company.....	9.67
San Francisco & San Joaquin Valley Railway Company	374.97
California Northwestern Railway Company.....	165.52
California Eastern Railway Company.....	29.44
North Pacific Coast Railroad Company ..	94.00
Pacific Coast Railway Company	84.88
Nevada-California-Oregon Railway.....	101.43
Eel River and Eureka Railroad Company.....	25.00
Nevada County Narrow Gauge Railroad Company....	22.50
Sierra Railway Company of California.....	67.80
Los Angeles & Redondo Railway Company.....	17.70
National City & Otay Railway Company.....	26.90
San Diego, Cuyamaca & Eastern Railway Company...	25.37

San Diego, Pacific Beach & La Jolla Railway Company	13.54
Yreka Railroad Company	7.5
Crescent City & Smith River Railroad.....	15.25
Alameda & San Joaquin Railroad Company.....	42.10
Arcata & Mad River Railroad Company	20.25
Colusa and Lake Railroad Company.....	22.00
Pajaro Valley Consolidated Railroad Company.....	34.90
The Pacific Lumber Company.....	7.90
McCloud River Railroad Company.....	30.63
Iron Mountain Railway Company.....	11.00
Mill Valley & Mount Tamalpais Scenic Railway.....	8.19
Randsburg Railway Company.....	29.66
San Pedro, Los Angeles and Salt Lake R. R. Co.....	49.20
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Total.....	6084.666

OUR BANKS

The banking system of California is one of the soundest in the world. In the early days of the State, it was very indifferent indeed, but those old days have been left behind by an interval of over thirty years. Our currency system is and always has been on a gold basis, even during the darkest days of the civil war. Of course this has been eminently fitting in a State where the whole industrial system was established on the basis of gold mining. It is true that the National banking system has been successfully introduced and that it is growing stronger every year, but the National banks of the State are as truly gold banks as any other. The growth of our banking system, especially during these late years, has been truly wonderful and the year 1901 has beat the record. The figures which we offer show an increase of \$50,341,501 in resources, \$40,281,715 in deposits and \$1,477,207 in capital. In 1890 our banking resources were \$261,353,268, deposits \$171,229,-531 and capital \$56,628,552.

The prosperity of our banks is shown by the fact that during the year which ends near the close of the calendar year, the Bank of California made 33 per cent. in round numbers on its capital and paid 16 per cent. in dividends. It could have paid double the amount. The Anglo-Californian Bank, The First National Bank

and others paid large dividends and carried large amounts to their reserve fund.

In the Savings Bank, the resources have been increasing at an unprecedented rate. The Hibernia Savings and Loan Society have resources of \$53,894,409.14 and deposits of \$50,763,010.86, the greatest outside of New York City, the German follows it up with \$32,954,377.56 resources and \$30,766,038.77 deposits.

SAN FRANCISCO COMMERCIAL BANKS.

Following is a statement of the condition for December 31, 1901, of the seventeen State commercial banks of San Francisco:

Resources—

Bank premises.....	\$2,126,229.37
Other real estate.....	2,607,240.32
Bonds and stocks.....	6,690,196.83
Loans on real estate.....	4,023,116.79
Loans on stocks, bonds.....	17,465,907.43
Loans on other securities ..	6,265,653.98
Loans on personal security.	19,661,569.48
Money on hand.....	11,993,761.50
Due from banks.....	18,482,562.91
Other assets.....	870,628.22

Total resources.....\$90,185,766.73

Liabilities—

Capital paid in.....	\$9,267,962.54
Reserve fund, etc	14,432,078.72
Due depositors.....	55,545,547.72
Due banks.....	8,130,414.36
Other liabilities.....	2,809,763.39

Total liabilities.....\$90,185,766.73

The deposits in these banks show a gain of \$9,274,810.52 for the year.

SAN FRANCISCO SAVINGS BANKS.

Following is a statement of the condition for December 31, 1901, of the nine Savings banks of San Francisco:

Resources—

Bank premises.....	\$1,733,223.50
Other real estate.....	5,525,145.21

Bonds and stocks	60,939,443.65
Loans on real estate.....	63,550,516.93
Loans on stocks and bonds..	5,111,289.20
Money on hand.....	3,849,478.50
Due from banks.....	2,462,637.31
Other assets.....	353,262.09

Total resources.....\$143,524,996.39

Liabilities—

Capital paid in.....	\$ 4,050,000.00
Reserve fund, etc.....	5,835,358.02
Due depositors.....	133,430,482.77
Other liabilities.....	209,155.60

Total liabilities.....\$143,524,996.39

The deposits in the above banks show a gain of \$8,850,047.96 for the year.

Following is a statement of the condition of the 303 banks in operation in California at the close of 1901, the Nationals returning for December 10 and the State banks for December 31, 1901:

Resources—

Bank premises.....	\$ 7,904,911
Other real estate	17,597,869
Bonds and stocks.....	96,453,619
Real estate loans.....	110,072,781
Loans on other security....	126,603,354
Money on hand.....	31,498,930
Due from banks.....	57,638,875
Other assets.....	4,460,028

Total resources.....\$452,230,567

Liabilities—

Capital paid in.....	\$48,361,667
Reserve, undivided profits..	36,533,300
Due depositors.....	335,377,660
Due banks.....	20,645,104
Public money	857,990
Notes in circulation.....	6,197,392
Miscellaneous	4,257,454

Total liabilities.....\$452,230,567

INSURANCE

The insurance business done in this State is very large including as it does, that of a considerable part of the Pacific Coast of which San Francisco is the headquarters. The total fire business for 1901 was \$520,400,648, the premiums on which were \$7,522,401.88, while the losses were 31.2 per cent. The losses of State companies were 27.5 per cent, those of foreign companies 30.7 per cent. and those of companies of other States 32.3 per cent. The amount of fire business written for this State in 1900 was \$394,273,089. The premiums was \$5,861,133 and the losses 41.9 per cent. There were more policies written than in any other year in the history of the business, while the losses were the smallest since 1891. Statistics in detail are as follows:

FIRE INSURANCE.

Amount written	\$520,400,648.00
Premiums on same.....	7,522,401.88
Losses paid.....	2,344,581.05
Ratio of losses to premiums..	31.2

MARINE INSURANCE.

Amount written	\$214,252,950.00
Premiums on same.....	1,802,525.31
Losses paid.....	978,308.20
Ratio of losses to premiums..	54.3

Apportioned as follows:

TO COMPANIES OF THIS STATE.

Fire Insurance—

Amount written.....	\$36,802,397.00
Premiums on same.....	585,763.97
Losses paid	161,276.65
Ratio of losses to premiums..	27.5

Marine Insurance—

Amount written	\$31,230,644.00
Premiums on same.....	315,962.30
Losses paid.....	176,208.76
Ratio of losses to premiums..	55.8

TO COMPANIES OF OTHER STATES.

Fire Insurance—

Amount written.....	\$228,423,495.00
Premiums on same.....	3,318,846.53
Losses paid.....	1,073,535.37
Ratio of losses to premiums..	32.3

Marine Insurance—

Amount written	\$10,826,374.00
Premiums on same.....	135,787.36
Losses paid.....	71,147.87
Ratio of losses to premiums..	52.4

TO COMPANIES OF FOREIGN COUNTRIES.

Fire Insurance—

Amount written	\$255,174,756.00
Premiums on same.....	3,617,791.38
Losses paid.....	1,109,769.03
Ratio of losses to premiums..	30.7

Marine Insurance—

Amount written	\$172,195,932.00
Premiums on same.....	1,350,775.65
Losses paid.....	730,951.47
Ratio of losses to premiums..	54.1

The Life business has been unusually prosperous. There are only two California Life companies in this State, the Pacific Mutual of this city and a company in Los Angeles. The business done by the Pacific Mutual for the year was \$2,362,000, on which the premiums were \$103,893.92. The policies renewed represent \$8,197,800, the premium \$304,244.20. The Conservative Life Los Angeles, had policies in force representing \$2,496,870. The Pacific Mutual paid \$159,892 during the year. The total new policies written in 1901 in this State amounted to \$32,950,280; those renewed \$132,736,590; total in force Dec. 31st \$176,802,624, besides \$18,233,327 industrial.

The largest transaction in insurance ever effected in this State was when last year the Pacific Mutual sold for a sum approximating a million dollars their industrial insurance to the Metropolitan of New York.

One of the newest and most beneficial forms of insurance is that where life business assumes the form of a guarantee to a man's

creditors. There is an increasing amount of money invested in this description of insurance which is simply a form of life insurance.

BUILDING AND LOAN ASSOCTAIONS.

Up to May 31st, the time of the annual report of the Commissioner, there were 138 Building and Loan Associations in the State, to which there were added 3 before the report was sent to the Governor. They were distributed as follows:

Alameda.....	13
Fresno.....	1
Humboldt.....	1
Kern.....	2
Los Angeles.....	18
Marin.....	3
Merced.....	1
Modoc.....	3
Napa.....	1
Orange.....	4
Placer.....	1
Riverside.....	1
Sacramento.....	2
San Bernardino.....	2
San Diego.....	3
San Francisco.....	64
San Luis Obispo.....	1
San Joaquin.....	2
San Mateo.....	2
Santa Barbara.....	2
Santa Clara.....	6
Solano.....	1
Sonoma.....	3
Tulare.....	3
Ventura.....	3

The Building and Loan methods of savings is growing in favor in the large cities, one company in San Francisco, the Continental, having built 175 homes of the 990 in the State during the past year.

The assets of the Building and Loan Associations of the State in 1901 were \$17 881,576.70, their capitalization \$540,300,000.

The number of shares held by members was 4,580,500. The year's receipts were \$12,906,212.40. The membership was 46,561, the number of borrowers 12,373. The number of houses built during the year was 990, the number from the first organizations of these societies 14,955.

OUR IMPORT TRADE.

San Francisco's import trade has grown steadily since the era of American occupation, although owing to various causes, particularly the methods of the treasury department, it has sometimes apparently retrograded. For instance, all the teas that used to be imported via San Francisco were entered to our account, as also all the sugar, no matter what the ultimate destination, but now those for Eastern ports by rail are credited to those ports. For the past year this makes a difference of many millions of dollars. Then too, the imports of every description from the Hawaiian Islands are now reckoned as domestic. Adding these to the total, this makes the import trade of San Francisco for 1901 the greatest known in our history, giving a grand total of \$54,433,275. The import trade as entered at the Custom House was valued at \$37,382,022. Our foreign imports have grown as follows: 1850 \$3,000,000, (est.); 1857, \$6,397,354; 1870, \$19,733,850; 1880, £37,240,514; 1890, \$45,894,125; 1900, \$39,424,433, or including Hawaii \$45,000,00. Our imports generally consist of free goods such as sugar, coffee, tea, rice, spice, raw silk, raw fibres, materials for fertilizing, etc., dutiable goods of wines and spirits, dry goods, metals and manufactures thereof. The Hawaiian Islands used to be the principal source of our imports but now the Orient leads, Japan first, then China followed by the British East Indies and then by Great Britain itself. Our special domain, however, is Pacific commerce as all others amount to not more than about 17 per cent, leaving Pacific imports as 83 per cent nearly.

OUR EXPORT TRADE.

It is the custom of San Francisco to reckon everything shipped by sea, even to Eastern ports, as exports. This makes the total export for 1901 \$41,433,275 against \$35,684,537 for 1900: Hawaiian

islands not included. This gives an increase of \$5,748,738 for 1901. The total exports for these two years including the Hawaiian Islands were \$54,433,275 in 1901 and \$48,185,227 in 1900. The exports in 1901 were therefore the largest in our history. The growth of our export may be shown as follows:

1855.....	\$ 4,159,611
1860.....	8,532,459
1870.....	17,848,100
1880.....	35,563,286
1890.....	39,969,581
*1901.....	54,433,275

*Including Hawaiian Islands

Great Britain and Ireland lead in our export trade, which is made up principally of wheat, barley, salmon, canned fruit, flour, wine, etc. The Hawaiian Islands come next and here our trade is made up of machinery, general merchandise and food stuffs of every description. China is next in order, then Japan and Australia follow. The exports to the Orient consist of Eastern goods in transit, while about 40 per cent is made up of California flour, machinery, wine, canned fruits and vegetables, provisions, salmon, lumber, etc. To Australia and New Zealand we send salmon, canned and dried fruits, lumber, canned vegetables, machinery, overalls and a variety of miscellaneous merchandise. To Mexico and Central and South America our exports are of a varied character but flour, lumber, wine and quicksilver are the leading articles. A large proportion of Eastern goods in transit have, during the last two years been shipped to Australia and are now going to Central America, especially dry goods to the latter. The transit trade to China and Japan consists principally of raw cotton, domestics, machinery and nails. It is altogether very possible that our export trade will grow greatly during the next decade.

The starting of lines of steamships to South American ports and to Europe have already given it a great impetus to exports to Chile, Peru and Ecuador.

TONNAGE OF SAN FRANCISCO.

There has been a steady growth in the tonnage engaged in our trade, though not as great as might be expected, owing to the peculiar conditions of our early surroundings. In the early 50's

almost everything consumed by our people had to be brought here from the East or from foreign countries and our ports were visited by a large number of vessels from all parts of the world. As we became self-dependent the need of tonnage to carry merchandise hither fell off very largely. Hence, though the tonnage engaged in the trade of the port has increased it has not shown that increase which our growth as a State would seem to justify. Then the growth of our trade by rail with the East also militates against the increase of the shipping engaged in the commerce of the port. The arrivals of 1901 were: Steam, 996,779 tons; sail, 568,736 tons; total 1,565,515 tons; departures—steam, 973,953 tons; sail, 524,000; total 1,497,033 tons; the arrivals in 1890 were 1,076,858 tons; in 1880, 827,704 tons; in 1870, 395,949 tons; departures 1890, 1,076,-848 tons; 1880, 785,301 tons; 1870, 573,582 tons. Steam tonnage was as follows: 1890, arrivals, 470,348 tons; 1880, arrivals, 827,-704 tons; 1870, arrivals, 159,524 tons; departures 1890, 459,635 tons; 1880, 301,782 tons. Steam tonnage therefore makes up two-thirds of the whole. The nationality is principally American and here San Francisco leads the country at large where the facts are the reverse of this. During the past two years, the tonnage of the vessels engaged in our trade has increased in a remarkable degree.

THE CLEARING HOUSE.

The San Francisco Clearing House, though ostensibly representing San Francisco banks, really represents those of the whole State and is the best indication of our financial progress. The year 1901 has been the banner year in its history. The clearings have been \$1,178,169,736.30, against \$1,029,582,594.78 in 1900, an increase of about 15 per cent, while 1900 showed an increase of about 6 per cent over 1899. The following shows the record of the past twelve years.

1890.....	\$ 851,066,72.60
1891.....	892,426,712.41
1892.....	815,368,724.41
1893.....	699,285,777.88
1894.....	658,526,806.13

1895.....	692,079,240.22
1896.....	683,229,599.26
1897.....	750,789,143.91
1898.....	813,153,024.00
1899.....	971,015,072.23
1900.....	1,029,582,594.78
1901.....	1,178,169,736.30

The great increase of 1901 is due not only to an increase of trade in almost every line but almost to the development of the mining—copper, oil and lumber interests of the coast especially. The addition to our capital from these and from other sources cannot be fairly estimated at less than \$60,000,000 to \$70,000,000, part of which is represented in our increased banking resources and part in the payment of our trade balances with the East.

San Francisco has a high place amongst the commercial cities of the country when judged by her clearing house reports, but the latter fail to show the true statute. Cash payments are common here where in the East payment is made by check and other circumstances tell in the same direction. It is the opinion of a leading banker that an addition of at least thirty per cent should be made to the figures of our Clearing House so as to rate properly our importance as a commercial and financial center. If we had the same system that prevails in the East, the bank clearings of the year would reach \$1,500,000,000. The officers of the Clearing House are:

President, Thos. Brown; Vice President, H. Wadsworth; Secretary, Fred'k W. Zeile; Manager, Chas. Sleeper.

Clearing House Committee—Thos. Brown, Chairman; Ign. Steinhart, S. G. Murphy, Wm. H. Crocker, H. M. J. McMichael, Secretary.

REAL ESTATE.

The value of the improved and unimproved realty in the State for 1901 may be given at \$1,133,784,410, estimating that the assessment roll gives 60 per cent of the actual value. Of this great total the city and County of San Francisco gives \$320,745,280. the value of realty in San Francisco varies very much, but in Market Street the latest sales give a value of \$4,000 per front foot for

that portion of the street between Fifth street and the water front. The value of country lands depends on location and character, ranging from \$10 to \$300 per acre, the latter for the best fruit lands. Oil lands have sold at fancy prices. Higher figures than those here given have been obtained and doubtless will again for tracts of exceptional fertility. Under the heads of the various counties further particulars will be found.

In San Francisco during 1901, the real estate sales reached a value of \$29,147,969, against \$18,527,814 in 1900, an increase of 60 per cent nearly. Compared with 1898, they nearly trebled in value, the figures of that year being \$10,747,102. There was an especially good demand last year for residence lots and sites for factories.

Alameda.....	\$48,312,625
Alpine.....	143,960
Amador.....	2,541,105
Butte.....	8,643,484
Calaveras	2,955,205
Colusa.....	9,012,147
Contra Costa	8,928,290
Del Norte.....	1,509,485
El Dorado.....	1,984,320
Fresno.....	19,145,610
Gleann.....	7,702,983
Humboldt.....	12,430,028
Inyo	873,609
Kern.....	13,352,562
Kings.....	5,050,855
Lake.....	1,997,135
Lassen.....	1,610,540
Los Angeles.....	58,317,915
Madera.....	3,751,325
Marin	7,439,870
Mariposa..	1,421,687
Mendocino.....	6,882,306
Merced.....	9,447,007
Modoc.....	1,253,685
Mono.....	487,817
Monterey.....	12,013,470
Napa.....	5,757,405
Nevada.....	2,743,560

Orange	6,806,895
Placer	4,162,405
Plumas	1,235,685
Riverside	6,145,633
Sacramento.....	19,136,880
San Benito.....	4,095,760
San Bernardino.....	8,630,575
San Diego.....	11,576,509
San Francisco.....	192,447,170
San Joaquin.....	19,381,381
San Luis Obispo.....	8,098,064
San Mateo.....	8,553,555
Santa Barbara..	8,908,497
Santa Clara.....	32,042,965
Santa Cruz.....	6,483,880
Shasta.....	4,257,684
Sierra.....	985,370
Siskiyou]	4,497,258
Solano.....	10,934,513
Sonoma.....	14,924,995
Stanislaus.....	7,658,665
Sutter	4,279,917
Tehama.....	6,352,405
Trinity	784,495
Tulare.....	9,768,265
Tuolumne.....	3,542,590
Ventura.....	5,276,014
Yolo .	10,940,581
Yuba.....	2,653,155
<hr/>	
Totals	\$.680,270,651

COUNTY EXHIBITS.

The following letters give in detail valuable information about the counties they refer to. We publish them as received:

RIVERSIDE.

DEAR SIR:

Replying to your letter of the 11th inst. for certain data regarding Riverside County, I can give you the following:

Wheat.....	225,000 centals
Barley.....	400,000 "
Oats.....	None
Gold and Silver....	\$175,000
Oranges and lemons..	6,200 car loads

Yours truly,

W. W. PHELPS, County Clerk.

SANTA BARBARA.

DEAR SIR:

Your inquiry of 11th inst. addressed to the County Clerk of this County, has been handed by him to me for reply.

I will endeavor to give as faithfully as possible the various productions for 1901. In case I have to refer to the productions of other years I will so state:

- Barley, 600,000 sacks of 90 lbs. each.
- Wheat, 300,000 sacks of 90 lbs. each.
- Oats, 134,000 sacks of 90 lbs. each.
- Hay, 60,000 tons.
- Lima Beans, 12,600 sacks of 80 lbs. each.
- Other beans, 204,000 sacks of 85 lbs. each.
- Sugar Beets, 91,123 tons, producing 100,000 sacks of sugar.
- English mustard, about 6,000,000 lbs.
- Potatoes, about 100,000 bushels.
- Oranges, \$50,000 worth.
- Lemons, \$250,000 worth.
- Walnuts, 1,000 tons.
- Olive oil, 36,000 bottles of one quart each. A very large quantity of olives have been pickled
- Butter, \$320,000 worth sold.
- Poultry, \$70,000 worth sold.
- Honey, 100 tons.
- Pampas plumes, 1,000,000.
- Petroleum, 300,000 barrels.
- Wine, 45,000 gallons.
- Outlay of improvements in the city of Santa Barbara, \$800,000.

Cattle sold, 22,000 head.
 Cows sold, 7,000 head.
 Calves sold, 2,500 head.
 Hogs sold, 4,500.
 Sheep sold, 65,500 head.
 Horses sold, 5,000 head.
 Mules sold, 1500 head.

The receipts from the sales of stock amounted to one and three quarters million dollars.

I have been unable to get the output of wool. In 1900, 39 tons were shipped out by rail.

I trust that these few items will enable you to give Santa Barbara city and county a fair showing in your forthcoming publication.

Very truly yours,

C. M. GIDNEY, Secy.

SACRAMENTO.

DEAR SIR:

Your favor of the 20 ult. to the "Bee" has been referred to this office and in reply I beg to say that from the County Assessors book I find the acreage as below:

Wheat, 109,000; oats, 93,000; barley, 12,000; corn, 1,000; hay, 72,500.

From other sources I find the products to be in sacks as follows:

Wheat, 500,000; barley, 170,000; oats, 200,000; corn, 16,000; wine, 600,-000 gal.; brandy, 50,000 gal; beans, 1,000,000 sacks; hops 10,800 bales; oranges and lemons, about 140 cars.

Very truly yours,

M. R. BEARD, Secy.

HUMBOLDT.

DEAR SIR:

Answering your specific inquiries of the 10th ult. (directed to the County Clerk of Humboldt Co.), I give you the following:

Product	Acreage	Tons Produced
Wheat.....	750	1,125
Barley.....	2,100	2,940
Oats.....	7,000	8,400
Corn.....	800	1,120
Hay.....	23,000	35,000
Beans, not produced commercially—no data.		
Wine and brandy	"	" "
Beet Sugar, not produced.		
Borax	"	
Hops	"	commercially.

Petroleum not produced commercially.
 Flax and fibers " "
 Copper " "
 Coal " "
 Lumber, feet, 225,000,000 (1901).
 Wool, lbs., 850,000 (Average of the last 5 years).
 Oranges and lemons, not produced commercially.
 Gold (value), \$75,000.

I enclose herein a condensed table of the actual exports of Humboldt County for the year 1900 (1901 not being yet tabulated); also a sheet making explanation of the various items where they are condensed or thrown together.

Yours truly,
 GEO. A. KELLOGG, Secretary.

EXPLANATION OF SOME ITEMS IN REPORT OF HUMBOLDT CO. EXPORTS FOR 1900.

1. "Animals and Animal Products"; Includes all live stock shipped from the County by sea; also fresh and salt meats, lard, tallow, wool, hides and pelts, game, poultry, etc.
2. "Fruit;" is principally green apples, with some pears, cherries, and prunes.
3. "Grain"; is nearly all oats, with a little barley.
4. "Vegetables;" Made up mostly of potatoes and dried peas.
5. "Manufactures"; 375,000 lbs. leather; 720,000 lbs. excelsior; balance miscellaneous in small and unimportant items.

HUMBOLDT COUNTY EXPORTS, 1900.

From the Records of the Humboldt Chamber of Commerce.

	Weight, lbs.	Value \$
Animals and Animal Products.....	7,862,210	397,700
Butter, cheese, condensed milk and cream	4,852,135	1,049,545
Fish	302,800	7,810
Fruit.....	3,830,800	56,200
Grain	1,503,225	18,790
Vegetables.....	2,377,010	26,940
Manufactures.....	1,196,000	112,310
Merchandise and household goods	270,000	13,500
Miscellaneous.....	8,252,000	61,890
<hr/>		
Totals, except lumber	30,446,180	1,744,685
Lumber, all kinds, feet 162,635,560.....	484,089,900	2,242,520
<hr/>		
Grand totals.....	514,536,080	3,987,205
Weight equivalent to short tons.....	257,268	

LUMBER EXPORTS, PARTIAL DETAIL.

Description.	Number.	Feet.
Lumber.....	.....	99,766,348
Shingles.....	477,018,000	47,701,800
Shakes.....	16,693,775	5,564,592
Pickets.....	57,970	57,970
Laths	15,000	2,500
Posts	60,392	724,700
Ties.	87,097	2,787,100
Bolts, cords.....	1,977	3,036,670
Miscellaneous.....	.....	2,993,880
Total feet (as above) .....	.....	162,635,560

Included in the foregoing Lumber Exports are the following:

FOREIGN LUMBER EXPORTS.

To	Cargoes	Feet	Weight	Value
Australia.....	14	7,911,252	27,89,382	\$147,390.81
Mexico.....	2	541,403	1,894,910	9,039.68
China.....	1	361,196	1,264,186	6,862.72
Central America.....	1	204,672	716,352	2,786.55
—	—	—	—	—
18	9,018,523	31,565,830	\$166,079.76	
Hawaiian Islands....	34	10,334,199	33,748,647	153,440.93
—	—	—	—	—
52	19,402,722	65,313,477	\$319,520.69	

MOVEMENT OF VESSELS, TONNAGE AND PASSENGERS.

	Steam	Sail	Total	Tonnage	Passengers
Arrived.....	414	169	583	238,419	8,368
Departed	419	167	586	239,769	7,988
—	—	—	—	—	—
Totals.....	833	336	1,169	478,188	16,355

GEO. H. KELLOGG, Secretary

KERN.

GENTLEMEN:

Yours of the 17th ult. to the "Californian" has reached my hands at such a date that I fear that the information desired will be of little avail. The date has been of hasty preparation and is of railroad shipments alone—from Bakersfield, Kern, Tehachapi and Formosa.

Lbs.

Live stock.....	22,480,000
Hay.....	10,000,000
Dried Fruits	1,860,000

Potatoes.....	2,400,000
Grain.....	480,000
Wool.....	960,000
Hides.....	163,000
Tallow.....	72,000
Honey.....	240,000
Oranges.....	240,000
Borax	1,800,000
Lime.....	9,000,000
Petroleum.....	3,926,350 bbls.

For Gold, etc. see State Mining Board.

Respectfully,

BEN L. BRUNDAGE, Secy.

STATISTICS SANTA CLARA VALLEY.

Value fruit crop.....	\$1,500,000
Acres wheat	12,695
" barley.....	12,920
2 Hay..	31,050
Prune crop.....	85,000,000 lbs.
Grapes	12,900 acres
Gallons, brandy	330,000
Gallons, wine.....	5,430,000
Quicksilver an amount second only to that produced by Spain.	

In canned fruits of various kinds 10,000,000 two and one-half pound cans—fresh fruits, 20,000,000 pounds.

Largest quantity of seeds produced in any like section and a great share of all produced in the United States.

SANTA CLARA VALLEY IMPROVEMENT CO.

NORTHERN CALIFORNIA.

The following from an article by Gen. N. P. Chipman, President of the California State Board of Trade gives much valuable information with regard to this section. The latest obtainable statistics will be found elsewhere in this volume under appropriate headings:

Entering California in Nevada County, by the way of the Central Pacific Railroad, the visitor comes quickly down from the great height of the Sierra Nevada Mountains to the foot-hills of Placer County, through the orchards and vineyards covering the country

around Auburn, Newcastle, Penryn Loomis, Rocklin, Roseville, to the city of Sacramento, where he finds himself in the center of the Great Interior Valley of the State, at the State Capital, and where tide-water once ebbed and flowed.

A few hours from snow-covered, heavily forested mountains into regions of luxuriant, semi-tropical verdure, is a transformation bewildering but altogether delightful. A glance at the accompanying map will show where the visitor now stands relatively to San Francisco, and the counties comprising the Sacramento Valley, a description of whose resources and industries is the purpose of this article. Nevada County is the Eastern gateway to this land of sunshine, fruit and flowers and agricultural prodigality.

A line drawn east and west through the southern boundary of Solano County at Vallejo, would pass near Richmond, Va.; drawn along the northern boundary of Shasta County it would strike the Atlantic coast near New York City. The floor of the valley proper narrows and terminates at Red Bluff, Tehama County. But many stretches of rich river bottom, valley lands, occur in Shasta County, below Redding, and west of Anderson and Cottonwood, are fertile plains and foot-hills and creek valleys of fine agricultural land, a characteristic of most of the counties reaching into the mountains: indeed, it may be properly said that the valley terminates at Redding. The valley widens as it extends south, and follows the southern boundary of part of Placer and Sacramento, Yolo and Solano Counties, and brings the valley to San Pablo Bay, (an arm of the great Bay of San Francisco) at Vallejo. The general direction of the valley is north and south. A line drawn north and south through Suisun, on Suisun Bay, would pass near Willows, Red Bluff, and Redding. On the east, the valley is bounded by the Sierra Nevada mountains, and on the west by the Coast Range. The Sacramento River rises in the vicinity of Mt. Shasta, and courses south, bisecting the valley and emptying into Suisun Bay. It is navigable and is navigated by steamboats to Red Bluff. By some improvement of the river it may be navigated to the town of Redding, Shasta County. Rising in the Sierras are numerous tributaries of the Sacramento River, which find their inexhaustible supply in the springs, subterranean reservoirs, and

snow banks of the mountains. The land situated on the east side of the Sacramento in all the counties is blessed with one or more of these ever-living streams, the utility and value of which will be referred to later on. The portion of the valley on the west side of the river is not so highly favored, although not wanting in the means to procure every needed supply. Unlike the creeks and rivers rising on the west slope of the Sierras, which flow on perpetually, the characteristic of the streams rising on the east side of the Coast Range is that they carry the flood waters to the river and continue to flow until about June or July, and then begin to recede, ceasing at varying distances from the river to the foot-hills, but continue in quantity to points whence their waters are taken by ditches to the land below. Some impressions of the general southern slope of the valley will be seen from the elevations of the river—at Sacramento, thirty feet above sea level; at Colusa 60 feet; at Red Bluff, 220 feet. A canal is projected and partly built, which takes water directly from the river on the north line of Glenn County, and brings it as far west as Willows, and thence to practically all the valley land south and east of the canal.

A margin of no great extent along the river banks is wooded, and the lands on the east side have growing upon them scattered oaks, giving a park-like aspect to the landscape. This feature continues in Yolo and Solano Counties, but in Colusa and Glenn the plain lands are destitute of timber; the rolling hill lands and mountains are wooded. The great body of agricultural lands of the valley do not overflow; some of the river bottoms are subject to flood waters but exposed lands are mostly protected by levees.

Accurately speaking, we have but little waste land. The un-tillable foot-hills and lower mountain elevations furnish rich winter pasture for thousands of sheep and cattle and the mountains are not only the scene of large lumber enterprises, but afford extensive ranges for summer pasture of these same flocks and herds. In Tehama County alone there are two hundred thousand sheep that are moved in the spring to the mountain ranges and return in the autumn to the valleys and foot-hills for winter pasturage. Twelve thousand head of cattle are similarly handled. And so in a greater or less degree in most of the counties are the lands utilized.

It has been intimated that there is no practical difference between the climate of the valleys of Northern California and Southern California. Perhaps a word further should be said. I quote from my annual report to the California State Board of Trade for 1889, a general statement which fairly gives the facts and perhaps as well as I could again give them: "Much has been written of the unique character of the climate of California, and while it is widely known in a general way, its highest and best interpretation is exhibited in the marvelous range of products of the soil. There is no single country nor principality on the globe where there can be found, growing in perfection, all the varied products of which this report treats. Why this is true has never been satisfactorily explained, but the fact cannot be disputed. It is not due to the soil alone, for other countries have rich soil; it is not due to temperature alone, for the seasons are propitious in the south of Italy and in Spain; yet the results we have here are not obtainable there; it is not in the recurrence of a wet and dry season—a period of rain and a rainless period—for this peculiarity is found in the Mediterranean basin; nor is it in any peculiarity of the atmosphere of which we have any knowledge. And yet there is some subtle influence in the combination of all these—an alchemy of nature we do not understand—which has made the climate of California unique—phenomenal * * Latitude cuts but little figure here, although it marks zones of heat and cold on the Atlantic Coast. While I am writing (March 4th-6th, 1899), there is a blizzard raging in the East and West. Railroad trains are tied up, and snow is four feet deep in the city of New York. On the same parallels of latitude here the orchards are bursting into full bloom, vegetables are taken from open gardens; the first crop of alfalfa is nearly ready for the mower; young lambs are playing on the hillsides; farm operations are most active, and all nature is clad in verdure."

Attention is then called to the fact elsewhere shown that oranges are being shipped from Butte County, 150 miles north of San Francisco, and over 500 miles north of San Diego, and that elevation has more to do with temperature than has latitude. The report continues:

"I will not stop to give the causes, so far as they are determined, for it is enough to know the fact and that the causes are permanent. We have no recorded history and no traditions (and they run back to the days of Queen Elizabeth and to Ferdinand and Isabella) that tell a different story."

The climate of the immediate coast is most invigorating and stimulating, cool, bracing, and delightful; the laborer knows no fatigue except from physical exhaustion, produced by over-taxed muscles. The man who works with his brain yields only to failure of mental power. In the interior valleys, in midsummer the temperature is higher, and there is discomfort in working in the harvest fields, at the desk, and behind the counter. But the air is dry, and no such suffering is experienced as in the more humid climates, where the temperature is lower. We have no such thing as sun-stroke. It is the universal experience that persons coming to any part of the State increase in weight and strength, are less subject to nervous trouble, sleep and eat well, and improve in health if ailing from any cause. In fact, California is an universal sanitarium."

"One cannot find a region of the State devoid of scenic beauty, and in most parts one is surrounded by an inspiring and elevating combination of valley and mountain landscape. He can radically change his immediate surroundings in a few hours, if he lives in the great valley, by going into the mountains or journeying to the coast. Thousands of families do this in the summer, and have most delightful camping out experiences.

"But after all, the toiler cannot live on scenery nor on climate alone. It is the advantages which climate brings to him in the struggle for existence that most concerns him. And here is where resides the glory of California; namely, the economic value of its climate. Our climate is usually put forward as an attraction; it is most of all a *resource* of incalculable value; and it is a resource because by its influence we are enabled to so marvelously diversify and increase the number of our products. It is a resource, because man's labor can be made profitable every day in the year, and because there is no month when vegetation, in some form, is not growing. There is no season when all nature is at rest or locked in the icy embrace of a zero temperature, and the harvests of sum-

mer eaten into by long, weary consuming months of winter. In the field, orchard, garden factory; on the stock farm and in the dairy *every day* is a day of *productive labor*. We commence shipping fresh deciduous fruits to the markets of the East in May, and there is no cessation until December; and in November we begin to ship citrus fruits and they over lap the shipments of deciduous fruits beginning in May."

This general picture finds its counterpart in the region I am now bringing to the public attention. I wish to remind the home-seeker of a fact, not commonly understood, that there are about 20 degrees difference between the "sensible temperature, and the actual reading of the thermometer. For example, the thermometer in the valley may read 110 degrees, but owing to the dryness of the atmosphere, the effect upon the body produces less discomfort than would be felt in a humid atmosphere where the reading is 90 degrees.

The practical situation is that one can labor here in the summer's sun without suffering, where he would be driven to the shade in other climates. It should be added that our warm, cloudless and rainless summer months are just what we want to mature our crops and prepare our fruits for market. The prevailing winds are from north and south, the latter always cool and delightful, as it comes from the ocean, tempered in its journey inland. The north wind is warmer, and is a dry, sometimes disagreeable, wind, but it serves a most valuable office and adds to the general healthfulness of the valley.

Industries relating to agriculture are the growing of wheat, barley, oats, hay, some rye, and some, but not much corn. For many years Colusa was the banner wheat growing county in the State. Forage plants are quite extensively grown. Hemp has been and is being successfully and profitably grown in Butte County. The soil in many counties has been found adapted to the sugar beet, and a considerable acreage is planted, the product going to the sugar factories; this industry must soon have much importance in the valley. I may mention in this connection the advantages of sugar beet growing in this State. Briefly summarized, they are: Earlier maturity of the beet; earlier opening of the sugar-making campaign;

longer season for harvesting; longer run of the factory; greater yield per acre than in other States; greater per cent of saccharine; immunity from frost and from rain at critical periods. These are some of the climatic advantages which experience and scientific experiments have established. Some extensive hop fields are in the Sacramento Valley. Live stock is a large industry, especially hogs, sheep and horned cattle. Many horses and mules are bred on the larger ranches. The dairying interests are quite large, but not nearly so fully developed as they should be or could be made profitable. The poultry industry is almost wholly neglected. Large bands of turkeys are seen, but they are produced separate from the farm, and have a sort of nomadic existence, being herded and driven about from place to place for feed, much the same as a band of sheep. Many farmers (be it to their discredit said) buy their chickens and eggs and butter at the town stores, and not infrequently these come from Kansas, Iowa, and Nebraska, or from our sister State, Oregon.

The possible diversity of agricultural products in this great valley is its chief distinguishing characteristic. The richness of the soil and the prevailing climatic influences make it possible, with irrigation, to grow almost anything that man or beast may require, and without irrigation, a much greater agricultural development is possible than has yet been attained.

The Sacramento Valley is the most abundantly watered portion of the State. The large rainfall in the valley, coupled with the fact that great areas have been in single holdings, devoted chiefly to wheat growing or stock raising, has in former years not only retarded diversity of products but has contributed to the erroneous belief that irrigation was neither desirable nor necessary, and irrigation has not been much resorted to. Wheat growing, having become less profitable, attention is being directed to more diversified culture, and plans for more general irrigation are being considered, since it has been found that even on our best lands water is a distinctive source of greater production and makes agriculture more profitable, by adding many new products to the farm. The Central Irrigation District Canal will bring water directly, without any head dam, from the Sacramento River onto all the lands south

and east of Willows—an immense area, rich and productive. On the west side of the river north of this canal there is abundant water taking it from points high up on the creeks and conducting it by ditches to the land below. Ditches are now constructed which bring water from Thomes Creek to lands at Corning, Tehama County; at Orland, Glenn County, from Stony Creek, and at Woodland, Yolo county, from Cache Creek. On the east side, commencing in Shasta County, large creeks flow into the river from the Sierras, at convenient intervals, through all the counties on that side, until the American River in Sacramento County is reached. The map shows the frequency of these streams. There is ample water for the most complete irrigation of all the lands. Water underlies the valley everywhere, at varying depths of from fifteen to fifty feet.

A striking and most valuable feature of these mountain creeks and rivers is the latent forces within them that may be cheaply, and are being largely set free by electrical plants. These streams above the valley have a fall of from 50 to 100 feet per mile; often much greater. This power may be utilized and yet restore the water to the beds of the streams before reaching the valley, where it may be used for irrigation. Electric power plants are now in operation in Shasta, Tehama, Butte, Yuba, Placer, Nevada, and Sacramento Counties, of which great use is made. This power is being used for mining and military purposes; for lighting towns and cities; operating machinery; pumping water; operating farm implements, and various other uses. I know of no region so highly favored in the respects last mentioned.

In the Sierras, from Siskiyou County to the American River, are the finest and most extensive forests of sugar and yellow pine, spruce and fir timber existing in the State, and some of the largest lumber and mining enterprises are carried on in these mountains. The forests of California are her crowning glory, not as sources of lumber for market, but as the great conserves of moisture and as the mother of our creeks and rivers. Intelligent use of this great blessing will give us assurance of unchanging climatic conditions and ample supply of timber for all possible purposes. Shasta County is the largest mineral producer in the State.

The two terminal points of shipments of fruit by rail from this valley to other States are Marysville and Sacramento. Much fruit is sent to San Francisco and other points in the State for local consumption, which is not included in data. As oranges ripen earlier in Northern California than in the Southern part of the State (another of our climatic peculiarities), this is not a fair index of the extent of the citrus culture in the Sacramento Valley for the reason that much of this fruit is consumed in the State.

To move this fruit a car must depart every hour of every day in the year.

One of the great drawbacks to Northern California in the past has been the large individual land holdings. For example, nearly the entire river frontage in Colusa and Glenn Counties, running back from the river also many miles, was owned by two men—one having 40,000 acres devoted entirely to wheat, and but one family residing on this vast domain. Other large tracts were held, not only in these counties but in nearly all the others. About the beautiful town of Chico lie some of the richest lands in the world, which have like those referred to, and others, for all these years been under the blight entailed upon the State everywhere by the confirmation of Mexican grants. The owners of these great ranchos were proud of their possessions, and were unwilling in their life time to yield them up. It is perhaps not to be marveled at, for these were principalities good to look upon, and gratified a not altogether unworthy ambition. But it was against nature and against progress that this condition should continue uninterrupted. In Southern California the first breaking up of the great ranches began, and behold! beautiful towns and cities and colonies of happy homes on small areas have taken their place. In the San Joaquin Valley, about the flourishing city of Fresno, immense sheep walks have been turned into shady boulevards, which form the boundaries of the extensive raisin vineyards that have made Fresno County famous. In the charming Santa Clara Valley, in the picturesque Vaca Valley of the Sacramento, and other places I might mention, a like transformation has occurred. This is what is soon to happen throughout the Sacramento Valley. The decline in wheat growing, and the consequent profitableness of farming on a large scale; the

scythe of the Great Reaper; the mortgage and the Probate Court; have done or are doing their perfect work. Land which in former years could not be purchased at any price, is now on the market in any sized tracts desired, and at prices not much above the value assessed for taxation. Notably the forty-thousand acre Glenn ranch in Glenn County; the world-famous Bidwell ranch near Chico; the Wilson ranch in the same vicinity. In all the counties, particularly the counties north of the south tier, fine, productive land, improved and unimproved, is now on the market at prices no greater than similar lands sell for in settled portions of the Middle West.

There has never existed in this valley what may properly be termed a boom in land prices. When the wonderful movement took place in Southern California, and land went up to enormous figures, land prices advanced here in sympathy with the high prices asked in the South, and naturally, because the advantages here were in every way equal to those in the South. The effect was to retard purchases here, and this, added to the incubus of large land holdings, resulted in slow growth at the north. Again, successful orchard planting here had a tendency to advance prices of unimproved contiguous land. This had a depressing effect. These conditions have entirely changed, and the time is now most opportune for investment in the Sacramento Valley. The presence of an orchard does not give a fictitious value to adjacent land. To show that there is room for as many as may come, statistics show that we have a population of 191,901, occupying 17,995 square miles, which is nearly eleven persons to each section of 640 acres, and not less than 60 per cent of these reside in the cities and towns.

Much of the literature relating to the earlier phases of social life in California gave a very false impression of the existing State of civilization, which still exists to some degree. I know from the questions asked me by inquirers who write for information about California, that there is much doubt in the minds of many whether we have yet emerged from the state of semi-barbarism erroneously supposed to prevail during the exclusively gold-hunting period.

Presumably the citizens of a State that is the home of two great universities, whose public school system has received highest praise

for liberality and advanced methods; in which are five State Normal schools; where free tuition is offered through all grades to the High School and through the State University, must have some conceptions of what is essential to a self-respecting and broad-minded people, and must themselves possess some of the attributes they would inspire in the youth. Sufficient to say that all the advantages which liberal appropriations of money and an intelligent selection of teachers can give, we possess in all parts of the State. In the establishment and support of church organizations, the Sacramento Valley has kept pace with other portions of the State. In all our towns and cities churches of the principal denominations are found. The charming out-door life keeps many away from active service, and no doubt this is noticeable by the visitor; but the church nevertheless has generous support.

CALIFORNIA MANUFACTURES.

Washington, January 18.—The census preliminary report on the manufacturing industries of California shows 17,582 establishments, increase 59 per cent; capital \$205,395,025, increase 40 per cent; average number of wage-earners 91,047, increase 25 per cent; total wages \$47,425,947, increase 15 per cent; miscellaneous expenses \$16,190,282, increase 25 per cent; cost of materials used \$188,125,602, increase 57 per cent; value of production, including custom work and repairing, \$302,874,761; increase 42 per cent.

The capital and value of products for cities separately reported as follows:

Los Angeles—Capital \$11,742,838, increase 72 per cent; products \$21,297,537, increase 115 per cent.

Oakland—Capital \$6,364,651, decrease 4 per cent; products, \$9,174,257, increase 7-10 per cent.

Sacramento—Capital \$7,492,313, increase 33 per cent; products \$11,785,621, increase 13 per cent.

San Francisco—Capital \$80,103,367, increase 7 per cent; products \$133,069,415, decrease 2 per cent.

San Jose—Capital \$3,409,517; products \$4,410,062. San Jose was not reported separately in 1890.

TEXTILE INDUSTRY.

In Oakland the California Cotton Mills have for a long series of years struggled hard with the problem of laying the foundation of the textile industry in the State. For many years they used cotton grown in the San Joaquin Valley, but they found the price at which it could be produced too high and they imported cotton from Texas. They imported about 5,000,000 lbs. in 1901 and at the same time 5,000,000 lbs. jute. They manufacture cotton rope, jute rope and various descriptions of cotton and jute goods. The value of the industry in 1901 was \$900,000. The capital of the company was increased from \$800,000 to \$1,250,000. A flax mill has been started in Oakland which will work up the flax product of Butte and Sacramento Counties.

IMPORTS TO SAN FRANCISCO, 1901.

Belgium	\$707,590
France.....	1,206,705
Germany.....	1,485,998
Greece.....	15,153
Italy	403,608
Sweden and Norway.....	71,647
Great Britain.....	2,087,270
British Columbia.....	2,415,236
Guatemala.....	3,280,432
Ecuador.....	127,270
Costa Rica.....	295,392
Nicaragua.....	199,140
Salvador.....	893,669
Mexico.....	540,063
China.....	6,296,517
British East Indies.....	2,717,739
Japan	12,034,597
Australia.....	763,860
Philippine Islands.....	396,120
Cuba.....	254,817
Peru	35,646

Dutch East Indies.....	50,159
Chile.....	613,327
Asiatic Russia.....	9,291
Turkey	992
French Oceanica.....	397,287
Nova Scotia.....	834
Colombia.....	8,223
Brazil	3,839
Canada.....	15,375
Egypt	4,516
British West Indies.....	4,258
German Oceanica.....	11,626
British Oceanica.....	407
Spain.....	4,703
Elsewhere.....	28,722
Total.....	\$37,382,022

SAN FRANCISCO EXPORTS, 1901.

Hawaiian Islands (est.).....	\$13,000,000
Great Britain and Ireland.....	13,724,404
China.....	5,588,233
New York and East.....	3,916,495
Australasia.....	3,752,911
Japan.....	3,330,581
Central America.....	2,305,665
Mexico	1,740,883
St. Vincent.....	1,213,320
British Columbia.....	1,175,824
Philippine Islands.....	939,185
Peru.....	549,902
Ecuador	421,493
Tahiti.....	342,254
Chile.....	684,400
Asiatic Russia.....	220,724
East Indies.....	148,966
United States Colombia.....	149,668

Belgium	369,134
Spain.....	118,370
Germany.....	118,306
France	19,017
Samoa	60,252
Corea	60,206

SUGAR BEETS, 1901.

The following figures give the tons of beets produced in 1901:

	Tons
Salinas Valley.....	141,280
Pajaro	85,910
San Benito.....	27,620
Santa Clara.....	16,512
Alameda	53,000
Various Northern California Counties.....	21,000
" Southern " " "	170,000

SUGAR AND WHITE PINE PRODUCTION, 1901.

	Feet
Butte.....	32,000,000
Fresno.....	20,000,000
Mo loc.....	50,000,000
Shasta.....	100,000,000
Siskiyou.....	56,000,000
Tehama.....	29,000,000

Statistics from other counties could not be obtained in detail.

LUMBER PRODUCTION, 1901.

Redwood.....	350,000,000
Sugar and White Pine.....	300,000,000
Fir	110,527,000
Spruce	3,650,000
Cedar	985,000

Other soft woods.....	19,476,000
Hard wood.....	112,000
Total.....	784,750,000

Cedar and spruce are nearly all produced in Del Norte, fir in Humboldt (20,000,000 feet) the rest in the Sierra Nevada forests.

CALIFORNIA'S GOLD PRODUCTION.

The following is the gold production of the State since 1848 as estimated by the Mining Bureau :

1848.....	\$245,501
1849.....	10,151,360
1850.....	41,273,106
1851.....	75,938,232
1852.....	81,294,700
1853.....	67,613,487
1854.....	69,433,931
1855.....	55,485,395
1856.....	57,509,411
1857.....	43,628,172
1858.....	46,591,140
1859.....	45,846,599
1860.....	44,095,163
1861.....	41,884,995
1862.....	38,854,668
1863.....	23,501,736
1864.....	24,071,423
1865.....	17,930,858
1866.....	17,123,867
1867.....	18,265,452
1868.....	17,555,867
1869.....	18,229,044
1870.....	17,458,133
1871.....	17,477,885
1872.....	15,482,194
1873.....	15,019,210

1874	17,264,836
1875	16,876,009
1876	15,610,723
1877	16,501,268
1878	18,839,141
1879	19,626,654
1880	20,030,761
1881	19,223,155
1882	17,146,416
1883	24,316,873
1884	13,600,000
1885	12,661,044
1886	14,716,506
1887	13,588,614
1888	12,750,000
1889	11,212,913
1890	12,309,793
1891	12,728,869
1892	12,571,900
1893	12,422,811
1894	13,923,281
1895	15,334,317
1896	17,181,562
1897	15,871,401
1898	15,906,478
1899	15,336,031
1900	15,863,355
1901	15,730,700
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Total	\$1,361,106,740

BEET SUGAR PRODUCT, 1901.

	tons
Spreckels	28,000
Alameda	7,700
Union	3,500

Crockett.....	3,000
Oxnard	18,000
Los Alamitos.....	4,000

Total	64,200
Oregon.....	3,000
Washington.....	3,000

Total Pacific Coast.....	70,000

WINE PRODUCTION 1901. (Partial)

	gals.
Fresno	4,000,000
Napa.....	1,150,000
Sacramento.....	600,000
San Joaquin.....	3,000,000
Santa Barbara.....	45,000
Santa Clara.....	5,430,000
Sonoma	3,000,000

THE DRUG TRADE.

The trade of San Francisco in drugs, chemicals, perfumery, patent medicines, mineral waters etc., is extensive and constantly increasing and employs the energies of several large houses, besides a number of smaller ones. Its value may be estimated at four million dollars a year.

QUICKSILVER PRODUCTION. (Partial)

	flasks
New Almaden.....	4,371
Napa	4,996
Aetna	238
New Idria.....	4,859
Boston.....	1,581
Great Western.....	1,122
Great Eastern.....	1,730
Altovia.....	1,316
Standard.....	738

Sulphur Bank.....	181
Empire Con.....	2,245
Karl (part of year).....	300

The Marfa and Mariposa, Texas, produced 2,805 flasks in 1901.

SAN FRANCISCO DRY GOODS TRADE.

The year 1901 was a good one in the dry goods trade of San Francisco. For the first five months of the year the volume of business was at least ten per cent greater than for the corresponding time in 1900, but the machinists' strike, followed by that of the teamsters, packers and water front workers, lessened materially the volume of sales and it was not till the close of the year that business in this line recovered itself. This referring to the local trade is true, also to a great extent of the country trade, for the strike interfered with the shipment of produce to the city and of merchandise out of it, but taking the State as a whole, the volume of business quite equalled that of 1900, if it did not surpass it. The industries connected with the dry goods interest in the city such as the manufacture of overalls, etc. also suffered from the strike, but the output of 1901 did not fall seriously short of that of 1900. Prices as a rule followed the lead of eastern and foreign markets, but when they did not they favored the Pacific Coast retailer and consumer. Imports by rail have been unusually large as on account of the differences between the Pacific Mail Company and the Panama Railroad, domestics, etc. intended for Central America and which would have gone by the Isthmus are now shipped overland to this city and by the Pacific Mail Company's steamers to these ports. The shipment of domestics to China via rail and steamer through this city have been large—\$60,000 to \$70,000 worth on every steamer making up a very large proportion of the cargoes of these vessels. The business done with the Hawaiian Islands has been large and trade though interrupted somewhat by the water front strike. There has been a big trade done with Australia and New Zealand in overalls manufactured in this city and which take the lead of all others for durability and workmanship.

SOUTHERN CALIFORNIA.

The following relating to Southern California and Los Angeles city is taken from a pamphlet forwarded to us by the Los Angeles Chamber of Commerce:

Southern California, one of the choicest sections of this great country, is a little world of itself. Here, with an area of 45,000 square miles, may be found a wonderful variety of scenery and climate. Along the coast line, which extends for a distance of 275 miles, it is cool in summer, with a constant breeze from the broad Pacific. At a distance of from 20 to 30 miles from the ocean, the breeze loses some of its power, but there is still sufficient to temper the summer heat. Farther inland, on the great plains of Mojave and Colorado valleys, the sun rules throughout the year, and its rays in summer become somewhat too torrid for comfort, although, unlike the Eastern weather, the nights are almost invariably pleasant and cool.

The scenery is also varied. There are long stretches of valleys and mesas, rolling foothills and higher up in the mountain ranges deep canons, precipitous cliffs, and pine-clad summits, where on the northern slopes snow lingers late into the spring.

The section usually referred to as Southern California includes the seven southern counties of the State, namely, Los Angeles, Orange, San Bernardino, Riverside, San Diego, Ventura and Santa Barbara. The area of this section is about equal to that of Pennsylvania, and nearly as large as England. The population in 1880, was 64,371, or $7\frac{1}{2}$ per cent. of the population of the State. In 1890 it was 201,352, or $16\frac{2}{3}$ per cent of the population of the State. To-day it is about 350,000, or considerably more than 20 per cent. of the population of California. The growth of this section has, indeed, been most remarkable.

One of the most noteworthy features of the development of Southern California during the past few years has been the utilization of an abundant subterranean water supply, which was not previously known to exist. Southern California can no longer with justice be referred to as a semi-arid section. It is estimated that during the past four years nearly 100,000 inches of water have

been developed from underground sources, an amount sufficient to irrigate 6,000,000 acres of land.

Like Southern California, Los Angeles county embraces within its limits a great variety of scenery and climate. Within its 4000 square miles of territory—an area almost as large as the State of Connecticut—may be found the climate and scenery of almost every part of the State, from the cool and breezy seashore to the warm inland plains and bracing mountain tops. Of the area of the county, about four-fifths is capable of cultivation, the remainder being mountainous. The shore line is 85 miles in length. Nine-tenths of the population is within 40 miles of the ocean.

The population of Los Angeles county, by the census of 1890, was 101,454. The population of the county by the census of 1900 was 170,298. The assessed valuation of property after equalization is \$103,328,904. The marvelous growth that has been made by this imperial county during the past few years may be seen from the statement that, by the census of 1880, the population was only 33,881, while the assessed valuation, in 1882, was only \$20,655,294. Thus, within the short space of twenty years, the population of the county has increased more than five-fold, and the assessed valuation of property in proportion. Great as the increase is, there are many conservative men who believe that the real growth of Los Angeles county has scarcely commenced; and the vast improvements that are provided for within the next few years warrant such a view of the future.

The chief industry of Los Angeles county is horticulture, the entire list of products including everything that can be grown in the State, and almost everything that can be raised in semi-tropic countries. The area of land within the county devoted to horticultural purposes is being rapidly extended, as the large tracts are subdivided and improved.

Los Angeles county is well provided with transportation facilities. A dozen lines of railroad center in Los Angeles city, tapping almost every section of the county, while coast steamships call regularly at the leading seaports.

Perhaps the most important enterprise for Los Angeles that has yet been commenced is the big breakwater now being constructed

by the Federal Government at San Pedro, for which an appropriation of \$3,000,000 was made by Congress. By means of this breakwater the depth of water over the bar will be so increased as to permit ocean-going vessels to come to the wharves, and Los Angeles will then be able to compete for its share of the growing Oriental trade. Other improvements such as dry docks, wharves and fortifications, will follow the harbor work. Other shipping points of the county are Port Los Angeles, near Santa Monica, and Redondo.

The rapid growth of Los Angeles county is shown by the statement that during the decade between 1890 and 1900 this county made the largest growth of any county in the State, namely, 67.8 per cent. the percentage of growth of the State at large during that decade being less than 23 per cent. The prosperity enjoyed by Los Angeles county is strikingly shown by statistics of the percentage of mortgage indebtedness to real estate values. These were recently, for the State at large, 12 per cent., for Los Angeles county, 5 1-5 per cent. The figures for Los Angeles city and San Francisco are 5 1-5 and 11½ respectively.

The San Gabriel Valley, which has always been considered a choice section of Los Angeles county, has the Sierra Madre range on the north. These mountains are grand and precipitous, enclosing the valley like a wall. This valley is undoubtedly the best known of any portion of Southern California. Even before there was any "boom" here worthy of mention, lands in the valley commanded a comparatively high price. As with most attractive sections, the level-headed mission fathers discovered its advantages, and in 1771 founded the San Gabriel Mission—whose church is still in good preservation. Now three railroads traverse the valley—rapidly being transformed into a succession of small homes and thriving little cities. The valley contains 100 square miles of territory. Under the shadow of the mountains, and separated from the lower plains by symmetrical foothills, the air is dry and bracing, proving beneficial to invalids who cannot bear closer proximity to the ocean.

The San Gabriel contains some of the choicest fruit land in Southern California, and is largely devoted to the raising of oranges and lemons, as well as deciduous fruits.

Pasadena, a beautiful city of over 10,000 population, is located

at the foot of the Sierra Madre range, about seven miles from Los Angeles. Within twenty years Pasadena has grown from a sheep pasture to a city of beautiful homes, with a world-wide reputation. Other settlements in the valley are Alhambra, Monrovia, Duarte and Azusa, all of which are mainly supported by horticulture. Adjoining the San Gabriel Valley on the east is the Pomona Valley. Irrigation is cheaply supplied to this section from the San Antonio river, which comes down out of the canon of the same name, a romantic spot, and a favorite resort for pleasure-seekers. The soil and climate of this section are peculiarly adapted to the culture of citrus fruits, which flourish here in great luxuriance. Railroad facilities are very good, and increasing, which has caused the valley to settle up rapidly. It contains a number of flourishing towns, the chief of which is Pomona, one of the most thriving cities of Southern California. For miles in every direction around Pomona extend continuous orchards of oranges, lemons, apricots, peaches, prunes, olives and other fruit trees, a specialty being made of olive culture.

Other important sections of the county are the Los Nietos Valley, a well watered district, noted for its corn, alfalfa and dairy products; the stretch of country between Los Angeles city and the ocean, over which the city is destined to spread before many years; the San Fernando Valley, north of Los Angeles, in which a large amount of fine wheat is raised; and Antelope Valley, an elevated region in the northern part of the county, where land is cheap and, with water, very productive.

Estimated output of the principal products of Southern California for the past year:

Citrus Fruits.....	\$10,000,000
Gold and Silver.....	6,300,000
Petroleum—estimates.....	5,600,000
Borax.....	1,214,000
Hay.....	3,000,000
Vegetables and Fruit consumed.....	2,000,000
Dried Fruits and Raisins.....	2,000,000
Grain.....	3,000,000
Canned Goods.....	1,500,000

Sugar.....	3,350,000
Fertilizers.....	360,000
Nuts.....	1,155,000
Cement, Clay and Brick.....	350,000
Wine.....	330,000
Beer.....	650,000
Butter.....	675,000
Beans.....	3,500,000
Asphaltum.....	501,000
Eggs.....	500,000
Celery.....	225,000
Poultry.....	300,000
Hides.....	150,000
Fresh Fish.....	275,000
Canned Fish.....	105,000
Wool.....	150,000
Vegetables—exported.....	340,000
Cheese.....	150,000
Olives and Olive Oil.....	425,000
Salt, Mineral Water, and Lead.....	457,000
Honey.....	275,000
Lime.....	102,000
Hogs, Cattle, etc.....	2,327,000
Miscellaneous Manufactured Productions....	20,000,000
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	\$71,266,000

The shipment of dried fruits from this section direct to Europe has become an important branch of the horticultural industry during the past few years, and is steadily growing.

The manufacture of machinery for the farmers, miners and oil men, gives employment to a large number of men in Los Angeles.

One of the leading attractions of Los Angeles county is the long stretch of beach. In this favored section the pleasures of the seaside are not confined to a few summer months. Even at Christmas it is a common thing to see people enjoying a bath in the surf.

Few cities in the United States have had such a remarkable and varied history as Los Angeles, the chief city of Southern California,

and the commercial metropolis of the southwestern corner of the United States. Few cities of this size, moreover, are so well known throughout the length and breadth of this country, and abroad. The rapid growth of Los Angeles, from an insignificant semi-Mexican town to a metropolitan city, has been told and retold, until it is familiar to millions of Americans, while the attractions offered by the city to health-seekers, pleasure-seekers, and tourists, have been spread abroad by hundreds of thousands of visitors, who, after one trip to this section, are in most cases anxious to return, and frequently become permanent residents.

During the past twenty years, Los Angeles has grown from a population of 11,000 in 1880, to 102,479 by the census of 1900. The present population is estimated at 125,000. There are three leading features that have contributed to such growth. These are climate, soil and location. Anyone of these advantages would be sufficient to build up a large city, but taken together, they insure the future of Los Angeles as the metropolis of the southwestern portion of the United States.

The pueblo of *uestra Senora Reina de Los Angeles* was founded on September 4, 1781, by soldiers from the mission of San Gabriel, under the protection of the Spanish Governor. The first census of the little city, taken in August, 1790, gave the total population at 141. They were a mixed class, composed of one European, seventy-two Spanish-Americans, seven Indians, twenty-two mullatoes and thirty-nine mestizos. As recently as 1831, fifty years after the founding of the pueblo, the population was only 770. In January, 1847, the population was 1500.

The census of 1880 gave Los Angeles a population of 11,311, Business was dull, and there was no sign that the city was on the eve of a marvelous growth. Five years later, on November 9, 1885, the last spike was driven in the Atlantic and Pacific Railway at the Cajon Pass, thus completing a new overland route from the Atlantic to the Pacific, and providing Los Angeles with competition in overland railroad transportation. From that time the growth of the city was wonderfully rapid. The great real estate boom of 1885-7 is a matter of history, as is also the wonderful manner in which Los Angeles held up under the reaction that in-

inevitably followed the collapse of the over-speculation of that period.

Considering that twelve years ago there was not a single paved street in the city, Los Angeles has made remarkable progress in street improvements. There are now over 200 miles of graded and graveled streets, over 20 miles of paved streets, 350 miles of cement and asphalt sidewalk, and 160 miles of sewer. Los Angeles has a complete sewer system, including an outfall sewer to the ocean.

At night Los Angeles presents a brilliant appearance. It was the first city in the United States to entirely abandon gas for street lighting, and replace it by electricity, which was done eighteen years ago. It is now one of the best lighted cities in the Union. Many of the lamps are on high masts. Seen from one of the surrounding hills, the view of the city at night is most beautiful and striking.

That Los Angeles is, and will always remain, the commercial metropolis of Southern California admits of no doubt. The city possesses the great natural advantage of being located on the shortest route, by the easiest grades, between the Pacific and the Atlantic oceans. The merchants of Los Angeles do a large business with a section of country extending from the eastern limits of Arizona to Fresno on the north. The principal articles of export are fruits, fresh and dried, potatoes, and vegetables, beans, wine and brandy, wool, honey, canned goods, sugar, wheat, corn and barley. Wheat is sometimes shipped from one of the ports of Los Angeles county direct to Europe.

Los Angeles, as the commercial metropolis of the Southwest, is becoming an important center of wholesale trade, the merchants supplying the large territory extending from New Mexico on the southeast to Fresno on the north. Many northern and Eastern houses have established branches here.

The banks of Los Angeles are noted throughout the country for their solid and prosperous condition, with deposits aggregating \$30,000,000. The clearings of the Los Angeles city banks for the year 1901 amounted to over \$162,378,058, an increase of nearly 32 per cent. over 1900, and of more than 100 per cent. over 1898. The grand aggregate of deposits in commercial and savings was, at

the end of last year, \$32,218,108, an increase over the preceding year of \$5,394,590. The strength of the Los Angeles banks has been shown by the success with which they have ridden out financial storms during the past decade.

Los Angeles enjoys railroad competition in the shape of three transcontinental lines, and work has commenced on a fourth, by way of Southern Nevada and Utah, which will shorten the distance from Los Angeles to Chicago over 200 miles. This company has been organized by a syndicate of capitalists headed by Senator Clark of Montana, who have acquired the Terminal Railway, as the Pacific Coast end of the new transcontinental line, which will open up to Los Angeles a section in Southern Utah and Nevada that is marvelously rich in coal, iron, silver and other minerals. The company is known as the San Pedro, Los Angeles and Salt Lake Railroad. The line of the Sante Fe system from San Francisco to Los Angeles is open. The Coast line of the Southern Pacific to San Francisco by way of Santa Barbara is in operation. Altogether there are a dozen lines of railway centering in Los Angeles. The Pacific Coast Steamship Company runs vessels every few days from Los Angeles county ports to San Francisco and San Diego.

Reference has already been made to the commencement of work by the national government on a deep-water harbor at San Pedro. This work, when completed, will undoubtedly give a great impetus to foreign commerce, and Los Angeles will before long become an important point for Oriental trade.

When the Nicaragua canal is constructed, the coast of Los Angeles county will be on the direct course of steamships sailing from the Atlantic coast and from European to Asiatic ports. It will also furnish a greatly enlarged market for the horticultural products of this section.

The street railway system of Los Angeles is very complete, although it has been built up within little more than a dozen years, previous to which time there was only one horse-car line in the city. At present, there is probably no city of the size in the United States that has such a modern and well equipped street-car

system, the total mileage of single track being over 160 miles, of which nearly all is electric. In addition to the local lines, the Pasadena and Pacific runs electric cars from Los Angeles to Altadena, in the foothills north of Pasadena, and to Santa Monica, on the ocean, the cars starting from the center of the city. Plans have been prepared for electric lines from Los Angeles to San Pedro, Whittier, San Gabriel and other points.

For a dozen years past, Los Angeles has been the scene of great activity in building operations. Scores of fine business blocks and hundreds of handsome residences have been built. The value of the buildings erected in Los Angeles during the past ten years is \$26,000,000, the permits for 1901 amounting to over \$4,000,000.

Every variety of location for a residence may be found within the city limits of Los Angeles, and the person who cannot be suited here must indeed be hard to please. The city lies about midway between the Sierra Madre range of mountains and the ocean, and about 300 feet above the sea-level. The Los Angeles river, which is almost devoid of water during the summer, but is sometimes transformed into a torrent for a few days in winter, runs through the city from north to south. In the northern and western portions of the city limits are hills of considerable altitude, from which magnificent views may be obtained of the surrounding valleys, with the ocean in the distance, the picture being framed in the north by succession of grand old mountains.

The southern and southwestern portions of the city are level, with a gentle slope to the southwest. Across the river is the section known as Boyle Heights, a high, gravelly table or mesa land.

There are a dozen public parks within the city limits, aggregating over six hundred acres, of which six are of considerable size. Westlake park, 35 acres in area, at the end of the Seventh street car line, is the most popular open air resort in the city. It has a lake with boats, fine drives and extensive views from the adjacent hills. Concerts are given on Sundays. Eastlake park in Los Angeles, covers fifty acres, and has been made quite attractive. Here also is a lake. The park nurseries are located here. Prospect park, on Boyle Heights, is a small but beautiful place, with many choice trees and shrubs. The oldest and best improved of the city parks,

on Sixth street, not far from the business center, is known as Central park. The trees here have attained a large growth. Hollenbeck park is a tract of about twenty acres, on the east side of the river, on Boyle Heights. It has been improved with shade trees and a small lake. Echo park, a beautifully improved tract in the north-western part of the city, contains the largest body of water in Los Angeles.

Elysian park, 500 acres in area, is the only park of considerable size, a remnant of the thousands of acres of such land that the city formerly owned. It may be safely said that this tract offers the greatest possibilities for diversity of growths of any piece of ground within the limits of an American municipality. Much of the land is within the frostless belt. The view of mountain, valley and ocean, city and plain are grand in the extreme.

What has been said in regard to Elysian park is true of the latest acquisition to the parks of Los Angeles, Griffith park, a tract of 3000 acres donated to the city by a public-spirited citizen. It is located about a mile north of the city limits, and embraces a varied assortment of mountain, foothill and valley scenery. A boulevard, to connect the parks of Los Angeles, has been commenced.

After all is said, the chief attraction of Los Angeles to new arrivals, lies in its beautiful homes. The rare beauty of the grounds surrounding the attractive homes of Los Angeles, Pasadena and other Los Angeles county cities, is a constant theme of admiration on the part of Eastern visitors. Other cities can show grander business blocks, but when it comes to gardens, Los Angeles is *facile princeps*. The mildness of the climate permits the most delicate plants and trees to flourish in the open air all through the winter. At Christmas may be seen hedges of calla lilies, geranium bushes ten feet and more in height, and heliotrope covering the side of a house, while the jasmine, tuberose and orange make the air heavy with their delicious perfume. Giant bananas wave their graceful leaves in the gentle breeze, and often ripen their fruit; the fan and date palm grow to mammoth proportions, and roses of a thousand varieties run riot. A majority of the residences stand in spacious grounds, a lot of 50x150 feet being the smallest occupied by a house of any pretension, even within a stone's throw of the business streets.

Many have from one to five acres of ground, all in a high state of cultivation, with well kept, verdant lawns, upon which the fig, orange and palm cast a grateful shade. Along the sides of the streets shade trees are also the rule, the favorite varieties being the graceful pepper which grows to a great size, the eucalyptus, and the grevillea.

The almost universal material for residences in Southern California is wood—pine and redwood, the latter being used altogether for outside and largely for inside finish. This material, while amply sufficient for the climate, lends itself to graceful decoration undreamed of by those who have been accustomed to houses of brick or stone.

A great variety of architecture is found among the residences of Los Angeles. The picturesque and comfortable early Mission style of architecture, which should have been more extensively adopted long ago by the American settlers, is at length coming into vogue. Some of the more pretentious of these residences, in the Mission style of architecture, have spacious tiled court-yards, covered with glass, in which fountains splash, flowers bloom and birds warble.

It costs much less to build in Southern California now than it did a few years ago. Again, a \$10,000 residence here is as good as a \$20,000 residence in the East.

One of the most attractive features about a home in this section is the wonderful rapidity with which vegetation of all kinds grows, so that instead of having to wait years for a new residence to assume a settled and homelike appearance, the owner only has to wait a few months until his house is surrounded with thrifty plants and climbing vines, while even some trees, as in the case of the eucalyptus, grow up to a respectable size from the seed within a year, and can be planted around the lot while less rapidly growing trees are attaining size, thus obviating the bare, hard appearance which attaches to new residences in less favored climates, however beautiful, architectually, the buildings may be.

The population of Los Angeles is cosmopolitan. During the past ten years it has received accessions to its population from every State in the Union, and from almost every country in the world. For instance, a statement published in the Los Angeles Times

showed that, five years ago, of the 53,413 voters on the great register of Los Angeles county, only 5244, or less than 10 per cent, were natives of California. There were 5048 from New York State, 4530 from Ohio, 4106 from Illinois, 3070 from Pennsylvania, 2237 from Iowa, 2179 from Missouri, and the balance from 43 other States and Territories, including Hawaii. Of the foreign born voters, numbering 10,430, or nearly 20 per cent of the total, 2446 were from Germany, 1747 from England, 1581 from British America, 1576 from Ireland, and the balance from 27 other foreign countries. Papers are published in the German, French, Spanish, Italian, Basque and Chinese languages. There are several thousand Chinese in and around Los Angeles, who are engaged in raising vegetables, or employed in housework. They have a residence section of their own, adjoining the old Plaza, in the geographical center of the city.

TONNAGE, 1901 (San Francisco.)

ARRIVALS

From	—Sail—		—Steam—	
	No.	Tons.	No.	Tons.
Great Britain.....	36	62,547	...	.....
Australia..	59	101,557	18	62,045
Hawaiian Islands.....	231	189,899	30	53,115
British Columbia.....	17	28,807	192	360,721
Panama.....	1	197	57	102,775
Hongkong.....	3	4,600	52	152,568
Mexico.....	19	14,863	18	14,440
Tahiti	8	2,515	10	19,406
Germany	9	16,720	16	37,348
Manila.....	1	1,312	22	59,112
Chile.....	26	46,115	26	44,265
Caroline Islands.....	1	253	...	.....
Sea in distress.....	6	5,981	2	4,757
Uruguay.....	1	1,469	...	.....
Japan.....	9	18,603	9	20,984
New York.....	2	7,302	4	14,743

Philadelphia.....	2	5.386	1	2.932
Baltimore	3	5.116	3	4.574
Belgium.....	17	30.609	...	.....
Foreign from domestic.....	4	6.251	12	28.88 ^b
Whaling.....	7	1.945	8	2.294
Peru.....	5	6.313	1	2.779
China	2	4.843	...	.....
Calcutta.....	..	.....	1	3.151
Apia.....	3	566	...	.....
Gallapagos Islands.....	2	127	...	.....
Italy.....	2	2.350	...	.....
France.....	1	1,605	...	.....
Asiatic Russia.....	1	377	...	.....
Norfolk, Va. ....	..	.....	2	2.850
Hunting.....	1	23	...	.....
—	—	—	—	—
Totals.....	480	568.736	486	996.779

DEPARTURES.

—For—	—Sail—		—Steam—	
	No.	Tons.	No.	Tons.
Great Britain.....	167	305.965	2	4.803
Hawaiian Islands.....	164	135.271	29	53.618
Australia.....	13	17.688	19	67.978
British Columbia.....	13	19.390	201	378.876
Hongkong.....	..	.....	49	143.923
Panama .....	..	.....	56	99.454
Guam.....	2	506	...	.....
Mexico.....	23	8.913	14	11.809
Tahiti	6	1.775	9	17.433
Whaling	8	2.197	7	1.892
St. Vincent f. o. ....	..	.....	12	27.881
China.....	..	.....	1	1.848
Foreign to domestic.....	3	4.565	9	23.022
New York.....	7	15.926	3	10.988
Apia.....	2	208	...	.....

Marquesas Islands.....	1	35	...	.....
Ecuador.....	3	2,612	3	5,527
Manila.....	2	194	12	31,178
Chile	2	3,182	26	44,335
Peru.....	1	425	1	1,957
Germany.....	...	.....	15	35,562
Central America.....	...	.....	1	1,496
Asiatic Russia.....	4	1,347	...	.....
Belgium.....	2	3,278	3	7,130
Marshall Islands.....	2	184	..	.....
Hunting.....	1	96	...	.....
Fanning Island.....	1	182	...	.....
Spain.....	...	.....	1	2,343
Clipperton Island.....	1	31	...	.....
—	—	—	—	—
Totals	428	524,000	473	973,053

BEANS.

Lima beans are raised principally in Santa Barbara and Ventura Counties. There are there 52,000 acres devoted to these which at 10 sks or 800 lbs. to the acre would give a crop of 520,000 sks. or 41,600,000 lbs. Orange County produces 15,000 sks. The crop of Lady Washingtons in 1900 was 300,000 sks.; in 1901, 500,000 sks. That of white beans in 1900 was 600,000 sks.; in 1901, 125,000 sks. The exports since 1894 have been as follows:

1894-5, 73,149,000 lbs.; 1895-6, 55,607,700 lbs.; in 1896-7, 71,974,700 lbs.; in 1897-8, 57,817,400 lbs.; 1898-9, 43,061,500 lbs.; 1899-1900, 41,516,900 lbs; 1900-1, 33,063,100 lbs.

OUR NORTHERN RAILROAD SYSTEM.

The Northern Railroad system when properly developed promises to be one of the most important system in the State. It will be to the great territory north of San Francisco Bay, what the trunk line of the Southern and Central Pacific are to the great interior valley. The mileage of these lines may be found elsewhere.

We may say that since that report was made the line of the Great North Western Railway has been extended 30 miles further, to Willitz, its present terminus. The lines in this section will ultimately join Eureka and Crescent City with San Francisco and will furnish another line up the western side of the Sacramento Valley mutually assisting in the development of the lumber, mining, agricultural and horticultural resource of this vast territory.

The Great North Western was first built by Peter Donahue from Danebu to Santa Rosa and was open July 1, 1870.

DESCRIPTION OF THE COUNTRY ON THE LINE OF THE S. F. & N. P. R. R. SYSTEM.

Tiburon, the Southern terminus of the road, is situated at the end of a peninsula running into San Francisco Bay. From this point the line runs along the shore of the bay on the south side of the peninsula for about three miles, then crosses it and descends to the Corte Madera Marsh. The peninsula is a succession of rolling hills, used principally for dairying. The Corte Madera Marsh is, at the point of crossing, about two and one-half ($2\frac{1}{2}$) miles wide, and is entirely unclaimed. At the north side of the marsh is Corte Madera Creek, which is crossed by a trestle with a drawbridge. The line then crosses the ridge which terminates on the bay at Point San Quentin, and from this ridge to San Rafael about $1\frac{1}{4}$ miles is on reclaimed marsh land. From San Rafael to Petaluma, the line crosses the marshes bordering on San Francisco and San Pablo Bays, the land on the right being chiefly marsh, some of it reclaimed and under cultivation, that on the left rolling hills used for dairy-ing and fruit. On this portion of the line there are three navigable streams crossed by drawbridges.

Between Petaluma and Cloverdale the line passes through the Santa Rosa and Russian River Valleys, the land on both sides being mostly level and under cultivation, the products being grain of all kinds, potatoes, fruit, and vines.

North of Cloverdale, the present terminus, the line of the Cloverdale & Ukiah R. R. runs for about ten miles through the canyon of Russian River, the land on either side being high hills partly cov-

ered with oak timber. The next four miles is along rolling hills on the west side of the river, mostly used for grazing. The next six miles is in the Sanel Valley, the land being level and cultivated. The line then runs for four miles through Henry Valley and over hills used for grazing. The last six miles of the line is in the Ukiah Valley, the land being level and cultivated.

The line from Fulton to Guerneville for the first eight miles is through a generally level farming country, the last eight miles being along the Russian River in redwood timber land; the land from which the timber has been removed being devoted to the cultivation of fruit and vines.

The Marin and Napa Railroad, from Ignacio to Sears' Point, is entirely in the marshes bordering on San Pablo Bay, about two-thirds of the marsh being reclaimed and under cultivation. This line crosses two navigable streams, Novato Creek, crossed by a trestle and a small drawbridge of 45 feet span, and Petaluma Creek, crossed by a trestle 3,000 feet in length, with a drawbridge of 226 ft. span.

The Sonoma Valley R. R. from Sonoma Landing to Schellville is on the marshes at the head of San Pablo Bay, nearly all of which is reclaimed, some of it being cultivated, but the greater portion being used only for pasture. From Schellville to Glen Ellen the line runs through the Sonoma Valley, and the land on each side is generally level and cultivated.

POPULATION OF COUNTIES.

In other pages of this book we have given the growth of the State in population as a whole. We here give it by counties according to United States census. Since that time there has been an increase of about 40,000 in the number of the whole population distributed principally in the cities in the Sacramento and San Joaquin Valleys, the coast counties and the south.

Alameda.....	130,197
Alpine.....	509
Amador.....	11,116
Butte.....	17,117
Calaveras.....	11,200

Colusa.....	7,364
Contra Costa.....	18,046
Del Norte.....	2,408
El Dorado.....	8,986
Fresno.....	37,862
Glenn.....	5,150
Humboldt	27,104
Inyo.....	4,377
Kern	16,480
Kings.....	9,871
Lake.....	6,017
Lassen	4,511
Los Angeles.....	170,298
Madera.....	6,364
Marin.....	15,702
Mariposa	4,720
Mendocino	20,465
Merced.....	9,215
Modoc.....	5,076
Mono.....	2,167
Monterey.....	19,380
Napa.....	16,451
Nevada.....	17,789
Orange.....	19,696
Placer.....	15,786
Plumas.....	4,657
Riverside.....	17,897
Sacramento	45,915
San Benito	6,633
San Bernardino.....	27,929
San Diego.....	35,090
San Francisco.....	342,782
San Joaquin.....	35,452
San Luis Obispo.....	16,637
San Mateo.....	12,094
Santa Barbara.....	18,934

Santa Clara.....	60,216
Santa Cruz.....	21,512
Shasta.....	17,318
Sierra.....	4,017
Siskiyou.....	16,962
Solano.....	24,143
Sonoma.....	38,480
Stanislaus.....	9,550
Sutter.....	5,886
Tehama	10,996
Trinity	4,383
Tulare...	18,375
Tuolumne.....	11,166
Ventura.....	14,367
Yolo.....	13,618
Yuba.....	8,620

TRADE WITH ASIATIC RUSSIA.

"Commercial Opportunities and Commercial Methods in Siberia," is the subject of a recent publication in the "Bulletin Commercial" published at Brussels, a copy of which has just reached the Treasury Bureau of Statistics. The Siberian merchant, it says, is even more intelligent, energetic and enterprising than those of Russia, and his average capital is probably larger than that of the average Russian merchant. Payments are made usually as in Russia, at 3, 6, 9 and 12 months. The opening of the Trans-Siberian railway has increased the wealth and consequently the consuming power of Siberia and caused an increased demand for foreign goods. There is therefore now an opening in Siberia for many kinds of goods not formerly sent to that country, except small quantities which passed directly from Russia, though the fact that the population is chiefly agricultural and in many cases half nomadic makes it apparent that the market will be for a few years greatly restricted, especially as regards articles of luxury. Only one-eighth of the population is located in the towns, and they are chiefly high officials and wealthy merchants.

The classes of articles most likely to find a market in Eastern Siberia are, according to this statement, agricultural implements, machinery and industrial material for flour mills, oil manufactories, distilleries, tanneries, machinery for gold, iron and coal mines, saw mills, machinery for brick fields and salt works, and manufacturing rope, paper, etc., while the demand for wines, spirits, silk goods, furniture, books, musical instruments and jewelry is apparently small.

Eastern Siberia, especially the Amour basin, offered at the time a good market for foreign products. Trade relations were carried on with China, Japan, the United States, and Germany. Two firms, one German and the other American, divided the greater part of this international trade. The former, which has an office at Odessa, installed a branch at Vladivostock in 1864. It now has 18 branches established in Eastern Siberia, the chief being at Blagovestchensk, Khabarovsk, Nicolaievsk, and Port Arthur. Besides representing numerous assurance and transport companies and shipping companies, both Russian and other, this firm transacts business affairs of all kinds, acts as bank, and stores merchandise of the most varied description—agricultural machinery, toilet articles, clothing, spirits, etc. It is said to realize enormous profits. The goods imported by the firm are sent principally from Hamburg and Odessa.

The American firm founded in 1870 is run on analogous lines. Its head offices are at Moscow, and branches are established at Vladivostock, Nicolaievsk, Khabarovsk, Blagovestchensk, etc. This firm has a purchasing house at Hamburg.

Eastern Siberia may now, however, be regarded as in a position more akin to the Baikal districts mentioned above, i. e., as being directly dependent upon Russia, but with this difference, that being less densely populated and less productive it offers a less limited opening.

Owing to the remoteness of Siberia and the lack of rapid transport thither, merchants and manufacturers not having depots for their goods in Russia have to content themselves by sending travelers to visit their Siberian customers. On the other hand, the

sparsity of the population will for some time to come cause a lack of activity in trade.

Merchants desirous of finding an opening in this new market should not establish special branches for a particular class of goods. There would appear to be only one way which is at once efficacious and economical, and that is for a body of merchants and manufacturers to group themselves together and to accredit representatives at Tomsk and Irkutsk sharing the expenses among them. It is indispensable that these representatives should have a depot for goods sufficiently large to enable them to respond to the demands of customers, who, as a rule, prefer to pay more so long as the goods are on the spot, rather than wait from 3 to 6 months for an order to be executed at a lower price. For most kinds of merchandise such a depot is absolutely necessary, and it would mean certain loss to attempt to do without it. The representatives must have a knowledge of the Russian language, without which he would find both the life and the business impossible. Sales should be made in Russian money, weights and measures, goods passed through the customs and delivered in Siberia. Siberian natives have remained wholly outside European influence, and they are far more ignorant of European customs than are the Russians themselves. All settlements should be made through the intermediary of the representatives who should be chosen with sufficient care to allow entire confidence being placed in them, and the necessary power of initiative granted.

Commercial bodies desirous of seeking an outlet for their goods in Siberia should endeavor to get into touch directly with the consumers by the establishment of large deposit warehouses where goods could be sold both wholesale and retail. The Siberian trader is accustomed to add a large percentage on the goods he sells, so that by passing the merchandise through his hands he would obtain the greater part of the profits.

In this connection, it may be interesting to note that the new port of Dalny on the coast of Liaotung peninsula, near Talienshan, was opened by the Governor of Port Arthur July 25, last. On that day the first steamer of the new line to run between Dalny, Port Arthur and Chefoo three times a week, was moored alongside

the new jetty. This jetty is made of solid steel, and the harbor affords a depth of 18 feet at low tide; a dry dock is also almost finished. When Newchwang is closed by ice, merchandise can be sent thence by train to Dalny, where the port will be open all the year round. It is also stated that the railway will shortly grant reduced rates on goods coming from the north, in order that they may be shipped from Dalny instead of Newchwang. At Dalny, it is said, six steamers can discharge cargo at once, and where moreover, the services of a pilot are not required, the approach to the harbor being a very easy one, with no bar such as is found at Newchwang.

The British Vice-Consul at Tientsin states that the town of Dalny is being well built, the wharves are solidly constructed, the streets are built at right angles, are wide and planted with trees. He is of the opinion that the only town on this part of the coast which will compare with Dalny will be Tsintau, which the Germans are contracting equally rapidly on the Bay of Kiao Chow.

OAKLAND AND HER SISTER CITIES.

The City of Oakland has a population of 69,000 and if we include Berkeley and other places in the neighborhood one of 112,500. Its site is one of the most beautiful in the world and the city itself—a city of beautiful homes and gardens—has not a superior on the Continent. It has a rapidly growing commerce and when the works connected with its harbor are finished will begin to rival its great neighbor across the bay. It has 14 miles of water front and a basin sufficient to accommodate a fleet of vessels with the channel back from the bay has been dredged to the depth of 30 feet according to the plans of the government engineer. As it is it has a tonnage rapidly approaching 4,000,000 tons in coal, lumber, produce and merchandise of all descriptions.

A late publication by the Realty Syndicate says:

"San Francisco has already occupied all of its desirable residence territory. The problem of reasonable and comfortable homes for business men, within easy distance of its business center, is one which sooner or later forces itself upon all of our large and growing

cities. In the case of San Francisco, the question has been gradually solving itself by the building up of the cities of Oakland, Berkeley and Alameda, all of which are within thirty minutes' pleasant ride of San Francisco, and have frequent and rapid transit facilities.

"Besides the advantage of much cheaper and pleasanter building sites offered by these cities is the very important one of a climate which is twelve degrees warmer, and an entire absence of the cold winds and fogs which sweep San Francisco every afternoon during a large part of the year. As a result of this exodus to these suburban cities, the ratio of their increase in population during the last few years has been much greater than that of San Francisco. During this period the constant increase in realty values in San Francisco, as a result of the congestion of population, has been such that it is no longer possible to purchase land at a reasonable figure within the forty-minute limit of the business center. The population being thus forced across the bay, the history of Oakland realty will follow that of San Francisco, presenting a swift and steady rise until she, too, is forced to turn to her suburban lands to accommodate her growth.

"The inherent advantages of Oakland in many respects is as plainly apparent. Oakland is the natural terminus for the existing transcontinental railroads and of those which may be built, as well as of the coast and interior lines.

"The pavements, well bituminized and macadamized, are in superior condition and well kept. The system of sewerage is perfect, and the use of sea water for flushing sewers is found of great value. The water supply is abundant and fine in quality. The telephone, telegraph and postal service is extensive and most satisfactory, while the administration of the police and fire departments and the various branches of the city government is prompt and efficient and a just cause of pride to the citizens. These things are all important features in a city, bearing directly on the comfort and health of its residents. In healthfulness Oakland stands first among the cities of our country, as the death rate for 1898 was only 12.10 per 1000, the lowest recorded for any city of its size in the United States.

"In its educational advantages Oakland occupies an enviable posi-

tion, offering opportunities seldom equalled by cities of its size. Besides its own, Oakland has the benefit of the colleges of Berkeley, which adjoins it on the north, connected by the admirable rapid transit system which conveys you to the university in less than twenty minutes. The State University, located at Berkeley, has an endowment of \$7,000,000 and an attendance of 2000 students.

"By the generous gift made to the trustees by Mrs. Phœbe Hearst, they have been able to begin the work of erecting an entirely new and complete group of buildings, the plans being selected by a committee from a competitive exhibit of the six most noted firms of this country and of Europe.

"The plans selected, which include the ornamental landscape designs for the grounds as well as the new buildings for the university, are the work of Monsieur Benard of Paris and were awarded a prize of \$10,000. When finished, the University of California will be one of the most beautiful and complete educational institutions not only of America but of the world. Work is to begin on the buildings at once, and before they are completed it is not unlikely that Oakland and Berkeley will be one city. The close proximity of such a magnificent seat of learning must inevitably attract a superior class of residents and exert a most beneficial influence on the community. Oakland has sixty-eight churches of various denominations.

"Passing from the consideration of Oakland as a city for homes, we shall find that it presents equally strong elements of commercial growth and prosperity. Considering Oakland's commercial aspect, we are at once impressed with the great advantage it possesses as a port of entry. It has miles of water front on the finest harbor in the world. The deep water arm of the bay, commonly called the estuary, extends along the south front of the city. Two sea walls 800 feet apart and 12,000 feet in length extend into the bay, forming a channel 30 feet deep at low tide. Arrangements are now being completed for an election for bonds to improve the seven miles of water front along Oakland's western shore. The expenditure of \$600,000, which is contemplated at this point, will give Oakland many miles of wharves open to ocean vessels of the deepest draft. A careful study of facts will convince an observer

that the commercial activities opening to Oakland are almost startling in their magnitude. The trade of the entire Orient is now seeking out shores, and the immense traffic which must pass through Oakland as a gateway for the exports and imports of the east must soon result in an enormous increase in its wealth, and make it one of the great seaports of the world. The substantial character of a city's growth when based upon a prosperous manufacturing interest is so universally known that where there is any foundation for it, every city strives to become a manufacturing center.

"The street car system of Oakland is complete, having fine cars, good roadbeds and quick service. There is also a marked disposition on the part of the railroad company to accommodate the public in every way possible, a condition worthy of especial mention. The various lines have been consolidated under the title of the Oakland Transit Company, electricity being its motive power. This company represents a consolidation of practically all of the street railroads doing business in Oakland, Alameda and Berkeley, comprising a total of over 81 miles and serving a population of about 135,000. The franchises are of long time and of great value, as they were granted prior to the passage, in 1896, of a State law requiring franchises to be sold to the highest bidder at a price of not less than three per cent. of the gross earnings. Competition is therefore very improbable. The company has no floating debt.

"One of the largest enterprises on the Pacific Coast is The Realty Syndicate, which has chosen Oakland as a field for its operations. The reason of this choice is apparent to any one who studies the subject of city growth and commercial development.

"The Syndicate controls the Oakland Transit Company, which represents the railway system above referred to, together with extensive tracts of choice city and suburban property. Its steady growth and brilliant success promise great returns from its business investments.

OUR TRADE WITH GUATEMALA.

This, one of the most prosperous republics of Spanish America has quite an important trade with San Francisco which is bound to grow largely in the future. The imports thence in 1901 were \$3,280,432—the domestic exports \$1,104,460. The leading imports were coffee, 28,267,417 lbs., valued at \$3,189,275 and 1,478,271 lbs. of sugar valued at \$36,646.

The leading exports have been as follows:

Bread, 75,177 lbs.....	\$ 3,035
Flour, 93,342 bbls.....	287,558
Carriages, railway.....	16,975
Cement, 2,000 bbls.....	4,651
Corn, 2969 ctls.....	4,714
Cottons, 1,071,767 yds.....	56,837
Cotton Clothing.....	14,019
Cotton goods, various.....	119,305
Carriages, etc.....	9,441
Wire, Barbed, 293,368 lbs.....	8,490
Explosives	13,020
Gunpowder, 7000 lbs.....	1,000
Machinery	30,722
Locomotives, 3.....	24,250
Fish, Cod, 35,804 lbs.....	1,907
Leather, sole, 25,725 lbs.....	7,798
Lumber, 1,193,000 feet.....	22,401
Oil, Coal, 9,689 cases.....	18,091
Tallow, 1,017,947 lbs.....	55,279
Potatoes, 10,859 ctls.....	12,269
Whisky, 10,479 gals.....	28,741
Wine, 1,145 cases.....	3,656
" 47,828 gals:.....	22,252

ERRATA.

There are devoted to the raisin grape, 60,903 acres.

Hoisting of the American flag at Monterey by Admiral Sloat, page 120, should read 1846 instead of 1864.

INDEX.

Alameda County.....	9, 10
Alpine County.....	10
Amador County.....	10
Asiatic Russia, Trade With.....	184, 185, 186, 187
Asparagus.....	76
Banks.....	133, 134, 135
Barley.....	69, 70, 71
Beans.....	76, 180
Beet Sugar.....	77, 78, 164, 165
Boots & Shoes.....	59
Forax	45, 46
Brandy, California.....	91
Building & Loan Associations, California.....	138, 139
Butte County	10, 11
Clearing House since 1890.....	141, 142
Calaveras County.....	11
Carbonate of Soda	46
Chamber of Commerce	103, 104, 105, 106, 107, 108, 109
Colusa County.....	11
Commercial Outlook	101, 102, 103
Contra Costa County.....	11, 12
Copper.....	40, 41, 42, 43
Corn	72, 73
Dairy Produce.....	93, 94, 95
Del Norte County.....	12
Drug Trade.....	165
Dry Foods.....	166
El Dorado County.....	12
Errata.....	191
Exports, San Francisco.....	139, 140, 160, 162
Fig, The	57
Flour	67, 68, 69
Fish Product, Our	98
Fresno County.....	12, 13
Fruit.....	52, 53, 54, 55, 56, 57
Fruit, Dried.....	58, 59

Fruit, Canned.....	59, 60
Glenn County	13
Gold.....	35, 36, 37, 38, 39, 163, 164
Hay.....	74, 75
Humboldt County.....	13, 147, 148, 149
Honey.....	91
Hop Crop.....	95, 96
Imports, San Francisco	139, 160, 161
Insurance....	136, 137, 138
Inyo County.....	13, 14
Iron.....	81, 82
Iron & Steel Industries, California	126, 127
Kern County.....	14
Kings County.....	14
Lake County.....	14, 15
Lasesn County.....	15
Lemon, The.....	63
Live Stock.....	97, 98
Los Angeles County.....	15
Leather.....	89
Lumber Resources.....	96, 97
Lumber Production.....	162, 163
Madera County.....	15, 16
Marin County.....	16
Mariposa County	16
Manufactures.....	79, 80, 81, 159
Mendocino County.....	16, 17
Merced County.....	17
Minerals	33, 34, 35
Minerals, Other.....	50
Mineral Water.....	51
Modoc County.....	17
Mono County.....	17
Monterey County.....	18
Napa County.....	18
Nevada County.....	19
Nicaragua Canal.....	127, 128, 129, 130
Nitrate of Soda.....	46
Northern California.....	149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159
Nuts.....	63
Oakland and Her Sister Cities.....	187, 188, 189, 190, 191
Oats.....	71, 72
Olive, The.....	60, 61
Orange County.....	19

Orange, The.....	61, 62
Orient, Our Trade With The.....	130, 131
Petroleum	46, 47, 48, 49, 50
Placer County.....	20
Plumas County.....	20
Population by Counties.....	182, 183, 184
Potatoes	76
Powder.....	82, 83
Prune Crop, The.....	59
Quicksilver.....	43, 44, 165, 166
Railroads in California.....	131, 132, 133, 180, 181, 182
Real Estate.....	142, 143, 144
Riverside County.....	20, 21, 145
Rye	74
Sacramento County.....	21, 146, 147
Salt.....	46
San Benito County.....	21
San Bernardino County.....	21, 22
San Diego County	22, 23
San Joaquin County.....	24
Luis Obispo County.....	25
San Mateo County.....	25
Santa Barbara County.....	25, 26, 145, 146
Santa Clara County.....	26, 27
Santa Cruz County.....	27, 28
San Francisco	98, 99, 100, 101, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126.
Shasta County.....	28
Ship Building	85, 86, 87, 88
Sierra County.....	28, 29
Silver.....	39, 40
Siskiyou County.....	29
Solano County.....	29, 30
Sonoma County.....	30
Southern California.....	167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178
Stanislaus County.....	30
Steel Cables	82
Sugar Beets.....	162
Sugar & White Pine	162
Sutter County.....	30, 31
Tehama County.....	31
Textile Industry	160
Tonnage, San Francisco.....	140, 141, 178, 179, 180
Trinity County	31

Tulare County.....	31, 32
Tuolumne County.....	32
The State.....	5, 6
The State, Its Growth.....	7, 8, 9
Vegetables.....	75, 76
Ventura County.....	32, 33
Wealth of California.....	83, 84, 85
Wheat.....	64, 65, 66, 67
Wine, California.....	89, 90, 91, 165
Wool and Manufacture.....	92
Yolo County.....	33
Yuba County.....	33

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CALIFORNIA

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